

Trend and Suggestions of Boeing Company with Analysis

Jiaqi Wang^{1,a,*}

¹*Institute of IBSS, Xi'an Jiaotong-Liverpool University, Renai Street, Suzhou, China*

a. Jiaqi.Wang2208@student.xjtlu.edu.cn

**corresponding author*

Abstract: This research presents an in-depth examination of Boeing's present situation, discussing the challenges it encounters under current circumstances and its strengths. The study employs the Value Chain model and SWOT analysis frameworks to thoroughly analyse Boeing's strategic direction, integrating real-world examples and considering the influence of its competitors. By leveraging these analytical models, the research aims to provide a detailed understanding of Boeing's operational and strategic positioning within the aerospace industry. The study's conclusion will draw upon the insights gained from the analysis to forecast the future trends of Boeing's development. Recommendations will be provided, offering strategic guidance based on the analysed data. This comprehensive approach ensures a well-rounded view of Boeing's potential trajectory in the competitive landscape, aiming to equip stakeholders with the necessary information to make informed decisions. Upon concluding the study, the results derived from the used analytical model will be thoroughly summarized. These findings will serve as a valuable reference for investors and stakeholders, offering insights that can inform their decision-making processes regarding Boeing's strategic and operational undertakings.

Keywords: Aerospace industries, Boeing Company, Aircraft Manufacturing, SWOT analysis, Value Chain analysis model.

1. Introduction

Boeing is one of the world's largest aerospace and defence manufacturers; however, in recent years, it has faced significant product quality and market performance challenges. The crash of the Ethiopian Airlines Boeing 737MAX has dealt a significant blow to the company's reputation. Moreover, ongoing supply chain disruptions caused by the COVID-19 pandemic have led to production and delivery delays. Since 2018, Boeing has experienced a turbulent market environment, with a significant decline in its stock value. Despite efforts to recover, issues surrounding product quality, regulatory scrutiny, and operational inefficiency continue to impact the company's reputation and profitability.

This study aims to conduct a strategic analysis of Boeing by two key business models: the value chain and SWOT analysis. Examining Boeing's internal operations and external environment can identify key areas where the company can improve to regain a competitive edge. This study aims to inform stakeholders about the current state of Boeing, explore how the company creates value through its activities, and highlight potential risks and opportunities for the future.

2. Company Introduction

According to the Boeing website, the Boeing Company is the leader in aerospace companies and the main commercial aircraft manufacturer [1]. The company also leads the space, defence, and security systems for NASA, the National Army, and other countries, and it has a good relationship with the US government. The headquarters of Boeing is in Washington, DC, and the company has customers in nearly 150 countries and more than 170 thousand employees in more than 65 regions and countries [2].

Therefore, the Boeing Company has been one of the world's most successful and competitive aerospace companies in recent years. People's prospects of Boeing are getting lower and lower due to two serious accidents with the new aircraft, Boeing 737MAX. This influenced Boeing's stock tumbling in 2020. Also, because of Boeing's technical reasons, several astronauts from the United States could not return to earth as scheduled—the increasing market capacity for Airbus and other competitors. Moreover, military aerospace technology has not made satisfactory research results in the last few years. The current situation has caused concern among the company's investors and other stakeholders.

3. Method Introduction

3.1. Method A. Value Chain Analysis Model

The Value Chain Analysis model was proposed by the renowned American economist Michael Porter, aiming to identify value-adding activities both within and outside a company. The model divides these activities into Primary Activities and Support Activities. Not every step in a company's participation in value activities can create value. Only specific value activities can truly generate added value. These operational activities, which create real value, are the strategic links in the value chain. To maintain a competitive advantage, companies must establish strengths in certain key strategic links of the value chain [3]. Therefore, by using the value chain analysis method to identify core competencies, companies can make targeted adjustments to various departments to optimise their benefits.

3.1.1. Inbound Logistics

Inbound Logistics refers to the activities that include receiving, storing, and managing raw materials. It ensures that raw materials are promptly delivered to the production line, reduces inventory costs, and shortens transportation time.

3.1.2. Operations

Operations transform raw materials into finished products, improving efficiency and quality. By optimising this process, companies can reduce waste, increase output, and ensure quality, enhancing cost-effectiveness and market competitiveness.

3.1.3. Outbound Logistics

Outbound logistics is the process that involves storing, distributing, and delivering products to customers, ensuring timely delivery and efficient management.

3.1.4. Marketing and Sales

Marketing and Sales include marketing promotion, sales strategies, and customer relationship management. These efforts help boost brand awareness and market share, driving sales growth.

3.1.5. Service

Service involves after-sales service, maintenance, and customer support. The goal is to enhance customer satisfaction, increase customer loyalty, and boost repeat purchase rates.

3.1.6. Firm Infrastructure

Firm Infrastructure includes management, finance, legal, and planning functions. It supports the company's operations by providing essential management and organisational structure.

3.1.7. Human Resource Management

Human Resource Management covers hiring, training, performance evaluation, and pay. It aims to attract, keep, and improve the productivity and satisfaction of employees.

3.1.8. Technology Development

Technology Development involves research, innovation, and improvements. It aims to boost product and process innovation to strengthen business competitiveness.

3.1.9. Procurement

Procurement refers to the acquisition of raw materials, equipment, and services. It ensures the efficiency of the procurement process, reduces costs, and ensures quality.

Through in-depth value chain analysis, companies can identify each link's cost and value-added factors, thereby discovering opportunities to improve efficiency and reduce costs. This analysis helps optimise internal operations and provides robust data support for formulating competitive strategies. Companies can enhance their market competitiveness and achieve sustainable competitive advantages by continuously optimising each value chain segment.

By analysing the value chain deeply, companies can pinpoint costs and areas for adding value at each step. This helps them find ways to become more efficient and cut costs. Such analysis also supports strategy development and enhances competitiveness, leading to a lasting competitive edge.

3.2. Method B. SWOT Model

The SWOT model is a widely used strategic analysis tool designed to help businesses and organisations comprehensively assess their internal and external environments. Companies can organise brainstorming meetings involving various employees to collect their opinions. Employees may also complete their own SWOT analyses individually. After identifying internal challenges through employee feedback, leaders must prioritise these issues. Subsequently, company executives need to decide whether these problems merit resolution [4]. It assists businesses in defining their positioning and formulating long-term development strategies but can also be used to evaluate the feasibility of new projects or products, analyse competitors' strengths and weaknesses, and identify potential threats. This enables the development of countermeasures to mitigate risks [5]. SWOT stands for the initials of four English words, covering the following four aspects:

3.2.1. Strengths

This refers to a business's internal advantages, such as unique resources, specialised skills, a strong brand, good financial health, a great team, and advanced technology. By recognising and using these strengths, a business can strengthen its market position and boost competitiveness.

3.2.2. Weaknesses

This refers to the flaws or shortcomings within a business, such as limited resources, poor management, outdated technology, low market awareness, or high employee turnover. By identifying and addressing these weaknesses, a business can minimise their negative impact on its goals.

3.2.3. Opportunities

Identify external factors that can benefit business growth, such as market trends, technological advances, government support, changing consumer demands, and competitor weaknesses. Businesses should recognise and capitalise on these opportunities to develop strategies for growth.

3.2.4. Threats

Identify factors in the external environment that may pose challenges or risks to business development. By recognising and assessing these threats, businesses can develop strategies to mitigate potential risks.

4. Analysis of Company

4.1. Method A. Value Chain Analysis Model

4.1.1. Inbound Logistics

Boeing has built an efficient global supply chain to reduce risks and ensure smooth production. For example, parts for the Boeing 787 Dreamliner come from countries like Japan and Italy. The company uses advanced logistics systems to optimise transportation and inventory, improving efficiency and reducing delays. Boeing also maintains long-term partnerships with key suppliers to ensure quality and reliability, such as working with Lockheed Martin on fighter jet projects. Additionally, Boeing is exploring new technologies, like using drones to transport small parts, to improve efficiency and speed in its supply chain further.

4.1.2. Operations

Boeing uses advanced composite materials and automation technology to manufacture the Boeing 787 Dreamliner. This reduces the aircraft's weight, improves fuel efficiency, and enhances production efficiency and quality control through precise robotic assembly. Additionally, Boeing utilises a global supply chain and modular assembly methods, outsourcing components for the Boeing 777 and Boeing 787 series to global suppliers like Rolls-Royce. This approach leverages global expertise and resources, with final assembly in locations like Seattle, enhancing production efficiency and international cooperation.

However, Boeing has faced challenges with its new production lines. The Boeing 777X, designed to compete with Airbus's A350, required significant modifications to existing production facilities, including new assembly lines and testing facilities. These changes are time-consuming and costly, adding uncertainty to production. The Boeing 777X incorporates many new technologies and designs, such as new wingtip designs to improve aerodynamics, which require thorough testing and

certification [6]. After a test flight, Boeing also discovered a damaged thrust link on a Boeing 777X and stated that the component did not work as expected [7]. The company plans to replace the engine mount and will resume flight testing when ready. To date, it has not received all necessary certifications, leading to multiple delays in delivery schedules. Some customers have cancelled their orders for the Boeing 777X and opted for Airbus's A350 instead.

4.1.3. Outbound Logistics

Boeing has multiple manufacturing and assembly facilities worldwide, including in the USA, Europe, and China. This global presence allows Boeing to allocate resources flexibly based on customer demand. For example, Boeing coordinates the production of its Boeing 737MAX between facilities in the USA and China to meet the needs of airlines in the Asia-Pacific region. To cater to the growing aviation market in India, Boeing has established partnerships with several companies, allowing some components of the Boeing 787 aircraft to be assembled there. These local partnerships help Boeing reduce transportation costs, improve delivery efficiency, and strengthen its competitiveness in the Indian market.

4.1.4. Marketing and Sales

Boeing utilises its global sales network to establish close connections with customers through local offices and dealers. This global network allows Boeing to respond to market demands quickly and offer customised solutions. With offices worldwide, Boeing can directly communicate with local airlines and government departments to understand their specific needs and provide tailored solutions. For example, in the last century, Boeing successfully provided the Boeing 747-300 model to Japan Airlines and All Nippon Airways to meet Japan's high-density, short-haul passenger market. Today, in the Indian market, Boeing has introduced the Boeing 737MAX series, designed to meet local needs with higher fuel efficiency and operational flexibility, suitable for India's large and rapidly growing aviation market. This market-oriented product customisation strategy helps Boeing meet Indian airlines' needs for efficient and economical aircraft.

4.1.5. Service

Boeing provides comprehensive after-sales services to its customers, including maintenance, repair, and technical support, according to the Boeing official website [8]. For example, as a major Boeing 737 and Boeing 787 operator, British Airways receives advanced aircraft health monitoring systems from Boeing. These systems help the airline monitor the status of its aircraft in real time, predicting and preventing potential maintenance needs. Boeing also collaborates with maintenance departments at some airports to enhance service responsiveness and efficiency. Boeing values long-term relationships with its customers and ensures customer satisfaction through regular communication, technical support, and feedback mechanisms. For instance, when Boeing delivered the first Boeing 787 to China Southern Airlines and found the airline's livery incompatible with the aircraft, Boeing provided a newly designed livery for free, which was well-received by the airline and its passengers.

4.1.6. Firm Infrastructure

As a major player in the aerospace industry, Boeing has core strengths in global operations, technological innovation, and market influence. However, recent issues in safety management and internal culture have surfaced, particularly highlighted by the crash of Ethiopian Airlines' Boeing 737MAX, which exposed significant lapses in quality control and safety review. Additionally, in 2024, technical issues with Boeing's CST-100 Starliner spacecraft led astronauts stranded in space,

pointing to safety oversights in pursuing progress and cost control. These incidents have underscored management and technical deficiencies, further impacting Boeing's reputation in the aerospace sector and severely damaging the company's reputation. Boeing has posted updates on safety and quality action on its official website [9]. However, regaining the trust of some customers will require long-term observation. It is impractical to restore credibility in the short term.

4.1.7. Human Resource Management

Boeing ensures its employees' skills and knowledge remain top-notch by providing millions of hours of training and diverse development programs, such as leadership development and tuition assistance plans. Additionally, the company offers comprehensive benefits, including health insurance, retirement plans, and employee stock purchase plans, to help employees achieve financial freedom and increase satisfaction. These measures highlight Boeing's strengths in human resource management, effectively attracting and retaining top talent, supporting the company's long-term success and continuous innovation.

4.1.8. Technology Development

Boeing's R&D department has extensive expertise in military aviation technology, such as stealth technology, advanced materials, and avionics. For instance, the development of the F-22 and F-35 fighter jets relies on Boeing's aerodynamic design and material science innovations. According to the Boeing website [10] Boeing has established close collaborations with various governments and military agencies, facilitating resource and technology sharing to advance projects, such as the KC-46 tanker aircraft developed with the US Air Force.

However, political and economic factors can influence the military market, which may lead to mismatches between Boeing's R&D direction and military needs. Some new weapon systems' development might be shelved due to budget cuts.

4.1.9. Procurement

Boeing sources a vast amount of raw materials and components from a global network of suppliers, which involves managing thousands of suppliers and ensuring the timely delivery of high-quality parts. For instance, in 2019, issues with the flight control system led to a major safety accident involving an Ethiopian Airlines Boeing 737MAX, causing Boeing's stock price to plummet and the grounding of the Boeing 737MAX worldwide. This incident significantly impacted Boeing's market value and reputation.

Moreover, the complexity of suppliers for key components affects stable production. For example, according to Elterman, Karen, and Ramon's study, the Boeing 787 utilises extensive carbon fibre composites supplied by multiple vendors [11]. Due to the supply chain's complexity and suppliers' insufficient production capacity, there were delays in delivering these critical components. These delays directly caused production delays for the first batch of Boeing 787 aircraft, forcing Boeing to postpone delivery schedules and impacting company revenue and customer satisfaction.

4.2. Method B. SWOT Model

4.2.1. Strengths

Boeing is a leader in aviation technology innovation, enhancing aircraft performance and fuel efficiency and maintaining global competitiveness. Boeing's investment in R&D enables it to meet future technological demands in aviation, such as automation and green aviation technologies.

Besides commercial aviation, Boeing has significant defence, aerospace, and security operations. It provides defence contracts to the US government and other countries and participates in space exploration projects like the International Space Station and NASA's moon landing programs. This diversification reduces the company's reliance on a single market, allowing for a stable income source during economic fluctuations.

4.2.2. Weaknesses

While Boeing's global supply chain is a strength, its complexity also increases management challenges. For instance, the Boeing 787 Dreamliner project experienced production delays and quality issues due to over-reliance on suppliers [12]. Additionally, disruptions in the supply chain, such as natural disasters, geopolitical tensions, or global pandemics, can significantly impact production efficiency, affecting deliveries and company profits.

The two crashes of the Boeing 737MAX and incidents involving astronauts stranded in space revealed significant gaps in Boeing's quality control and safety management, leading to the prolonged grounding of the series of Boeing 737MAX and major damage to the brand reputation. Although Boeing made improvements after these issues were exposed, public and regulatory doubts about its safety persist, and restoring its reputation will take a long time. This also reflects the company's excessive focus on market speed over necessary quality standards in the face of fierce competition.

After inspecting Boeing's Renton factory, FAA inspectors found several instances of quality control procedures not being followed. Additionally, a Congress-mandated expert panel noted a disconnect between Boeing's senior management and assembly workers, who were concerned about retaliation for reporting safety issues. FAA Administrator Michael Whitaker emphasised in a TV interview that Boeing prioritised production over safety and quality. Consequently, the FAA limited Boeing's Max production rates until the issues were resolved. Boeing's airline customers also expressed their quality concerns directly to its board last month, requesting that CEO Calhoun not be present [13].

Despite Boeing's leadership in technological innovation, the cost of innovation is very high. Developing new aircraft requires substantial funding, and with unstable commercial aviation demand, these investments can delay returns, placing a financial burden on the company.

4.2.3. Opportunities

The global aviation market is expanding post-COVID-19, especially in the Asia-Pacific region and emerging markets, driven by the growth of the middle class, increased travel demand, and airline fleet renewals. The demand for commercial aviation is continuously rising. Boeing can meet these market needs by launching more efficient and environmentally friendly aircraft like the new Boeing 777X. Additionally, the growth of low-cost airlines also presents Boeing with opportunities to expand its market share.

Government investments in defence and security are still increasing, particularly in areas like drones, missile defence systems, and advanced aviation technologies. Boeing can secure more military contracts through its subsidiary, Boeing Defense, Space & Security (BDS). Furthermore, the rise of space exploration, including NASA projects and private sector involvement, also offers significant opportunities for Boeing.

4.2.4. Threats

Airbus is Boeing's biggest competitor in the global commercial aviation market, and the two have been in long-term competition. Airbus has been discreetly taking advantage of Boeing's difficulties. Airbus holds a 62% market share, which is anticipated to increase as airlines hesitate to place orders

with Boeing [14]. Following the Boeing 737MAX crisis and certification issues with the Boeing 777X, Airbus gained more market share in these segments, which put significant pressure on Boeing. Additionally, the rise of new companies like China's COMAC poses a potential threat to Boeing, especially in key markets like China [15].

Global economic downturns or unpredictable events like the COVID-19 pandemic can profoundly affect the aviation industry. During the pandemic, airlines significantly reduced orders and postponed deliveries, impacting Boeing's cash flow and production plans. Even as the pandemic eases, it may take years for air travel to recover fully, affecting Boeing's short-term revenue.

4.3. Conclusion of Analysis

Using the value chain and SWOT analysis, Boeing demonstrates how its key activities collaborate to establish competitive advantages in aerospace and defence. Boeing excels in advanced manufacturing, R&D innovation, and post-sales support, providing high-value products and services globally and ensuring its industry leadership. However, it must continue to focus on complex supply chain management and operational efficiency improvements to mitigate risks like supply disruptions and production delays. In the SWOT analysis, Boeing's technological strengths and global presence are crucial in commercial aviation and defence, but it faces challenges like product quality, safety issues, and intense competition. Moving forward, Boeing must strengthen its technology and operations, launch innovative products, and enhance supply chain flexibility to seize new global market opportunities and maintain its competitiveness and sustainability. Otherwise, it will lose more and more market capacity.

5. Conclusion

The content outlines the challenges Boeing faces under current circumstances, as well as the advantages it holds. A comprehensive analysis of Boeing's strategic direction is presented using value chain and SWOT analysis models and incorporating specific examples and competitor impacts. The analysis concludes that Boeing can maintain its industry leadership through strong R&D capabilities. However, advanced products require stricter quality control, and Boeing needs to focus more on quality management during manufacturing to rebuild its social reputation and avoid severe trust issues.

Boeing's after-sales service also helps maintain good customer relationships, fostering brand loyalty. However, delays and quality issues caused by suppliers can severely damage these relationships, and if Boeing fails to meet customer demands, they may turn to competitors. Given the limited number of competitors and customer base, losing customers would significantly impact Boeing.

Lastly, in the passenger aircraft segment, Airbus is gaining market share. With unstable U.S.-China relations, China's decision to collaborate closely with Airbus could greatly affect Boeing's market share in China. With current R&D, Boeing struggles to produce passenger products that outperform competitors, necessitating a focus on military products and the rapid development of new products to meet customer needs and address increasingly complex global situations.

References

- [1] Güngör, H. (2023). *Reflections of The Strategies Applied in the Boeing 737-Max Crisis Management on Passenger Perception*. *Journal of Business Research-Turk / Isletme Arastirmalari Dergisi*, 15(3), 2249–2262. Retrieved from <https://doi.org/10.20491/isarder.2023.1710>
- [2] Boeing. (2024). *Innovations in Aerospace*. Retrieved from <https://www.boeing.com/company#general-information>
- [3] Săvescu, R. F. (2024). *Developing Inclusive Models of Value Chain Financing*. *Studies in Business & Economics*, 19(1), 216–235. Retrieved from <https://doi.org/10.2478/sbe-2024-0012>

- [4] Harmon, A. (2024). *SWOT analysis*. Salem Press Encyclopedia. Retrieved from <https://search.ebscohost.com/login.aspx?direct=true&db=ers&AN=100259317&site=eds-live&scope=site>
- [5] Haque, M. G., Yasir, M., Suradji, R., & Istianingsih. (2024). Benefits of Swot Analysis in Marketing Strategy for Sustainable Business Management. *Journal Return*, 3(4), 1–5.
- [6] Johnsson, J., & Wong, Y. W. (2024). Boeing Begins 777X Flight Tests With FAA in Breakthrough. *Bloomberg.Com*, N.PAG.
- [7] Johnsson, J. (2024). Boeing Halts 777X Flight Tests Over Damaged Engine Mount. *Bloomberg.Com*, N.PAG.
- [8] Boeing. (2024). *Innovations in Aerospace*. Retrieved from <https://www.boeing.com/services>
- [9] Boeing. (2024). *Innovations in Aerospace*. Retrieved from <https://www.boeing.com/strengthening-safety-and-quality>
- [10] Boeing. (2024). *Innovations in Aerospace*. Retrieved from <https://www.boeing.com/defense#products>
- [11] Elterman, K., & Casadesus-Masanell, R. (2019). *Airbus vs. Boeing (M): MAX 8 Disasters (July 2019)*. Harvard Business School Cases, 1.
- [12] Boeing Regulatory Challenges Bedevil The Global Supply Chain. (2024). *Aircraft Value News*, N.PAG. Retrieved from <https://search.ebscohost.com/login.aspx?direct=true&db=bsu&AN=179024562&site=ehost-live>
- [13] Robison, P. (2024). Fixing Boeing's Broken Culture. *Bloomberg Businessweek*, 4816, 8–10. Retrieved from <https://search.ebscohost.com/login.aspx?direct=true&db=bsu&AN=176417766&site=ehost-live>
- [14] Boeing's Turbulent Times: Safety Concerns and Market Share Challenges. (2024). *Aircraft Value News*, N.PAG. Retrieved from <https://search.ebscohost.com/login.aspx?direct=true&db=bsu&AN=179256213&site=ehost-live>
- [15] The Boeing Company SWOT Analysis. (2024). *Boeing Company SWOT Analysis*, 1–7.