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Case Study

Boeing: In a Steep Nosedive

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INTRODUCTION

Boeing Company became an American multinational corporation that designed, manufactured, and sold airplanes, rotorcraft, rockets, satellites, telecommunications equipment, and missiles worldwide. The company also provided leasing and product support services. Boeing ranked among the largest global aerospace manufacturers. It became the largest exporter in the United States by dollar value (USA Today 2009).

Boeing organized the firm into four primary divisions: Boeing Commercial Airplanes (BCA); Boeing Defense, Space & Security (BDS); Boeing Global Services; and Boeing Capital. In 2019, Boeing recorded US$ 76.6 billion in sales. Boeing ranked 54th on the Fortune magazine "Fortune 500" list (2020) (Fortune 2021), and ranked 121st on the "Fortune Global 500" list (2020) (Fortune 2020).

History

The Boeing Company started on July 15, 1916, when American lumber industrialist William E. Boeing founded Aero Products Company in Seattle, Washington. Earlier, he and Conrad Westervelt created the "B&W" seaplane (Aero Time 2020) (Encyclopedia Britannica 2020). In 1917, the organization was renamed Boeing Airplane Company, with William Boeing forming Boeing Airplane & Transport Corporation in 1928 (Aero Time 2020)[In 1929, they renamed the company United Aircraft and Transport Corporation, followed by the acquisition of several aircraft makers such as Avion, Chance Vought, Sikorsky Aviation, Stearman Aircraft, Pratt & Whitney, and Hamilton Metal plane (Weiss and Amir 2019).

In 1931, the group merged its four smaller airlines into United Airlines. In 1934, the manufacture of aircraft was required to be separate from air transportation (Encyclopedia Britannica 2020). Boeing Airplane Company became one of three major groups to arise from dissolution of United Aircraft and Transport; the other two entities were United Aircraft (later United Technologies) and United Airlines (Weiss and Amir 2019) (Encyclopedia Britannica 2020).

During the 1960s and 1970s, the company diversified into industries such as outer space travel, marine craft, agriculture, energy production and transit systems (Weiss and Amir 2019).

Boeing Co.'s $3.13 billion acquisition of Rockwell International Corp.'s aerospace and defense holdings drastically strengthened Boeing's hand in the defense-and-space business at the same time it piles more work on the busy plane maker's plate (Cole and Lipin 1996).

For Seattle-based Boeing, the sale came as its commercial-jetliner business was on the upswing and marked the company's first effort to participate in the continuing consolidation sweeping the defense industry. The purchase added the production of spacecraft and guidance systems to Boeing's lines of helicopters, planes, and military-aircraft electronics and systems (Cole and Lipin 1996).

Boeing, which employed 113,000 workers, quickly doubled production in preparation for a commercial jet boom and decided to develop a new variant of its 747 with a new wing (Cole and Lipin 1996).

The Rockwell operations-which made missiles and sensors, space shuttles, plane parts, assorted weapons and space systems-were run well. Boeing reduced the threat of distraction by planning to deposit the new Rockwell holdings entirely in Boeing's Defense and Space Group, out

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of the way of the surging commercial-jet operations (Cole and Lipin 1996).

The acquired Rockwell assets included operations that make key parts for some Boeing commercial airliners. A Rockwell partnership with Lockheed Martin Corp. took over operation of much of the U.S. space-shuttle fleet. Rockwell held contracts to provide the novel engines on Lockheed Martin's planned fleet of the next-generation Venture star space shuttles (Cole and Lipin 1996).

Other divisions produced and supported the Air Force's B-1 Bomber fleet, aircraft electronics and naval combat systems. Still others made seeker and sensor systems for missiles and satellites, and Rockwell became the lead producer of Global Positioning Satellite systems for the government. Other divisions in the sale made laser and directed-energy weapons, as did Boeing (Cole and Lipin 1996).

In December 1996, Boeing announced its intention to merge with McDonnell Douglas and, following regulatory approval, this was completed on August 4, 1997 (Skapinker 1997). The European Commission objected to the merger which ultimately placed three conditions on the merger: termination of exclusivity agreements with three US airlines, separate accounts must be maintained for the McDonnell-Douglas civil aircraft business, and some defense patents must be made available to competitors (Skapinker 1997). In 2020, Quartz reported that after the merger there was a "clash of corporate cultures, where Boeing's engineers and McDonnell Douglas's bean-counters went head-to-head", which the latter won, and that this may have contributed to the events leading up to the 737 Max crash crisis (Frost 2020).

Boeing, since its founding in 1916, has been a dominant player in the commercial aviation airframe manufacturing industry. The jet age had significantly reduced the number of players and by the mid-1990s the industry had become a duopoly with Boeing and the European Consortium Airbus. Because of volatility of the passenger airline industry and the significant development costs and time to production as well as the need to provide airframe variety, service, parts and financing, consolidation had occurred. Boeing controlled more than half of the market and Airbus had a third. The other competitors included the Russian holding company United Aircraft Corporation whose sales were primarily limited to Russia, the Chinese manufacturer COMAC, McDonell Douglas, Bombardier and Embraer. The jet engine suppliers were an oligopoly dominated GE, Rolls Royce, and Pratt-Whitney. All of which supplied Boeing and Airbus with engines. Because of development costs, and service scale as well as volatile demand, the number of engine suppliers was limited.

By the mid-1990s globalization, the growth of Ryan air and new aggressive carriers in the Middle East and Asia created new possibilities for demand growth. This situation also created the need for both new or upgraded airframes and the requirements for local content in the production market. These pressures created the need for both huge costs for plane upgrades and product development.

Throughout the 20th century, Boeing played a pivotal role in several aviation, including the introduction of the Boeing 707 in the 1950s, the first commercially successful jetliner. This breakthrough revolutionized air travel, making it faster, safer, and more accessible to the masses.

Boeing's commercial airplane division shaped global aviation. Its product lineup included the 727, 737, 747, 757, 767, and 777. The 737, introduced in 1967, remained the best-selling jetliner in history. Boeing was planning to launch a new model, the 787 and had plans to update the 737 (737 MAX) and 777 (777x) as well as phasing out the 747. In addition to its commercial division, Boeing included a robust defense, space, and security division. It played a vital role in supplying military aircraft, weapons systems, and satellite technology to various governments and defense organizations worldwide.

The Merger

In December 1996, Boeing announced its intention to merge with McDonnell Douglas following regulatory approval. It completed the merger on August 4, 1997 (Skapinker 1997). A clash of corporate cultures developed between Boeing engineers and McDonnell Douglas bean-counters which the latter won, resulting in inappropriate outsourcing, offshoring, and supply chain problems contributed to the Boeing downfall (Frost 2020).

The 1997 merger of Boeing and McDonnell Douglas became, like much of the industry's consolidation in the 1990s, a product of the peace dividend. But, while the other mergers brought together two or more defense companies, this one was different: it united a defense firm with a largely civilian company. Unexpectedly, it may be a success (Economist 2000).

In 1993, the Pentagon summoned America's main defense contractors to a meeting that has gone down in legend as “The Last Supper”. With the end of the cold war, the military procurement budget was being cut in half; the administration made it clear that it would prefer to deal with a smaller number of suppliers. So, 32 defense companies consolidated into nine (Economist 2000).

As for Boeing, Phil Condit, its president, was worried about the consequences of remaining concentrated mainly in the highly cyclical market for civil aerospace. “That would have meant Boeing being a bit player in military aircraft and space, while its fortunes ebbed and flowed with the commercial aircraft cycle,” he said. In search of stability, he contemplated a bold move: to buy-in space and military

aircraft expertise by acquiring, first, most of Rockwell International, a medium-sized American defense business; and then, in a much bigger deal, McDonnell Douglas.

The result would be to create the world's second largest defense company and the largest aerospace group (Economist 2000).

The American Defense Department gave the plan an unexpected approval. In 1996 it held a competition to develop the Joint Strike Fighter (JSF), which will eventually be the biggest defense procurement deal ever, worth up to $300 billion for the winner. McDonnell Douglas failed to reach the final round. Instead, the two finalists chosen to develop competing prototypes were Lockheed Martin—and Boeing. The Defense Department was intrigued by Boeing's ability to apply civil aerospace manufacturing techniques to keep down the fighter's price (Economist 2000).

For McDonnell Douglas, exclusion from the competition's last round marked its final fall from grace. Harry Stonecipher, McDonnell's boss, had tried in 1995 to fashion a deal with Mr Condit, who had been a friend for 20 years, but they could not agree on a price. They had another conversation a year later, and agreed to try once more, but only after Boeing had completed the purchase of Rockwell, announced in August 1996 (Economist 2000).

It was not defense, the business Boeing had bought into, which caused problems; it was the market for commercial aircraft, whose cycles had worried Mr.Condit before the deal. Harried by competition from Airbus, in 1997 Boeing fought to protect its dominant market position by slashing prices for its civil jets. Demand expanded out of control. The factories in Seattle could not keep up with the blistering pace; nor could suppliers. So, aircraft sold too cheaply had to be expensively completed outside the normal production sequence because of a shortage of parts (Economist 2000).

The upshot was expensive delays, and then huge write-offs, of some $4 billion. And in vain: Airbus still grabbed about half the market, up from its one-third share in the mid-1990s. By September 1998, Boeing was on the ropes (Economist 2000).

Arguably, the task of making the merger work distracted top management from the basic task of making and selling jet airplanes at a profit. Harry Stonecipher, the former McDonnell's boss, now Boeing's president, predictably denied that. He claimed it was just a coincidence that the civil-jet crisis came along at the same time. The whole board had agreed to expand production of 737s to counter Airbus's incursions into the American market with its A320 aircraft. “The same would have happened without the merger,” he insisted (Economist 2000).

Boeing embraced outsourcing, both locally and internationally, as a way of lowering costs and accelerating development. Boeing envisioned a 787-supply chain that kept manufacturing and assembly costs low, while spreading financial risks of development to Boeing’s suppliers. It intended to reduce the 787’s development time from six to four years and development costs from $10 to $6 billion. The opposite occurred. The project finished billions of dollars over budget and three years behind schedule (Denning 2013).

As early as 2001, L.J. Hart-Smith, a Boeing fellow, projected that excessive outsourcing raised Boeing's costs and steered profits to its subcontractors. Boeing retained final assembly which tended to be among the least profitable jobs in aircraft manufacturing. Subcontractors benefited from free technical assistance from Boeing if problems arose and they captured the highly profitable replacement parts business over the decades-long life of the aircraft (Hiltzik 2011).

While Boeing scheduled the first 787 to be delivered in 2008, a string of delays and cost overruns pushed deliveries into 2011. Boeing appeared to turn the corner with the 787 once deliveries started, but suffered a number of high-profile problems: fuel leaks, smoke in the cabin, and fires. Global regulators grounded the 787 in January of 2013, as they investigated whether it was safe to fly (Hiltzik 2011).

These problems persisted for years after the merger when many former McDonnell-Douglas employees occupied key top management positions and focused on minimizing costs and maximizing short term profits rather than investing in the future this reduced developmental costs and reduced risk of introducing new features. It felt that outsourcing increased efficiency and lowered operating costs. Boeing responded to pressures from top management and Wall Street to cut costs and raise shareholder value. Boeing spent less on research and development. This led to the loss of many of its dynamic capabilities which accrued to its suppliers. Boeing outsourced many activities to satisfy local content requirements. Extensive outsourcing and lack of control contributed to supply chain problems that impacted on its performance.

Boeing’s issues came to a head in January 2013, when an empty Japan Airlines 787 caught fire while parked at Boston's Logan Airport. A second battery incident nine days later led to an emergency landing in Japan. The Federal Aviation Administration (FAA) grounded the entire Dreamliner fleet until Boeing fixed the problem. This unprecedented move marked the first-time regulators grounded an aircraft in 34 years as they grounded the Dreamliner for three months until the FAA accepted Boeing’s proposed modifications to the lithium-ion battery system (Cooper 2013).

Despite its impressive legacy, Boeing faced several challenges and setbacks. The 737 MAX faced significant challenges in recent years due to two tragic accidents that resulted in a global grounding and recertification efforts.

Boeing implemented safety improvements and worked to restore trust in the aircraft. The 737 MAX crisis impacted Boeing's reputation. This led to significant financial losses and delayed deliveries. The company also faced delays in the launch of its new aircraft, such as the 787 and 777X.

The 737 MAX 9, like other variants in the MAX family, faced significant scrutiny and regulatory challenges following two fatal accidents involving the 737 MAX 8 variant in 2018 and 2019. These accidents led to the grounding of the entire 737 MAX fleet worldwide for over a year while Boeing worked on software updates and safety enhancements. The 737 MAX series gradually returned to service with regulatory approval from various aviation authorities after implementing the necessary modifications and enhancements to address safety concerns.

The Calhoun Era

In January of 2020 Dave Calhoun became chief executive of Boeing at its very lowest ebb with the mission to restore confidence after revelations that Boeing misled regulators to speed up certification of the flawed 737 Max jet, with deadly consequences. One of his first pledges focused on investing in the engineering capabilities crucial to program execution. It served as an acknowledgment that years of cost-cutting, outsourcing, and an excessive focus on short term gains hollowed out Boeing's engineering and drove Boeing shares to a seven-fold rise between 2010 and 2019. To catch up on Airbus' lead, Boeing needed to ditch the short-termism of previous management and invest in a new aircraft that offered greater benefits than those of its rival (Hollinger 2022).

With debt at $45bn, versus Airbus' net cash flow, Boeing lacked the $10bn for a new jet. Some analysts estimated Boeing needed $20bn or more to manage its current challenges and take on Airbus with a new aircraft. If the much-promised improvement in execution did not materialize soon, Calhoun and/or his top management risked becoming the ones to pay (Hollinger 2022).

In May 2020, Boeing cut over 12,000 jobs due to the drop in air travel during the COVID-19 pandemic and planned to cut an additional 16,000 positions (Schaper 2020). In July 2020, Boeing reported a loss of $2.4 billion due to the pandemic and the grounding of its 737 MAX aircraft, and it planned to make more job and production cuts (Cameron and Tangel 2020). On August 18, 2020, CEO Dave Calhoun announced further job cuts (Isidore 2020). On October 28, 2020, Boeing laid off nearly 30,000 employees, as it continued losing money due to the pandemic (Schaper 2020).

The Boeing 777X, the largest capacity twinjet, made its maiden flight on January 25, 2020 (Josephs 2020). Following an incident during flight testing, Boeing delayed the first delivery of the aircraft until 2024 (Gates 2021). Boeing's reputation, business, and financial rating suffered after the groundings, questioning its strategy, governance, and focusing on profits and cost efficiency (Tangel and Pasztor 2019).

Boeing slowly emerged from a 21-month grounding of its bestselling 737 max passenger jet in the wake of two fatal crashes. Covid-19 pushed air travel into a tailspin and with-it airlines' plane purchases. On January 27th Boeing announced a fifth straight quarterly loss. A record annual net profit of $10.5bn in 2018 turned into a record $11.9bn net loss in 2020. The aerospace giant delivered 157 passenger and cargo aircraft in 2019, 80% less than in 2018 and a third as many as Airbus, the European half of the plane making duopoly. One analyst heaped mock praise on Boeing for beating its previous tally from 1973 (Economist 2021).

Boeing began losing its way long before the max disasters. After merging with McDonnell Douglas in 1997, engineering excellence lost ground meeting Wall Street targets. Cozy relations with the Federal Aviation Administration (FAA) allowed the firm to self-certify many of its processes. When the max disaster struck, the firm botched its response (Economist 2021).

A combination of misfortune and poor leadership bankrupted many firms. Boeing was no ordinary company. Before the pandemic Boeing employed about one in 130 American workers, through a domestic payroll of 143,000 workers or through one of its 12,000 local suppliers employing another one million workers. Despite lay-offs across the aerospace industry in the past year, Boeing remained a source of well-paid jobs, thanks to its weapons and space-rocket business, a strategic darling of politicians (Economist 2021).

Even so, Boeing remained financially fragile. Its gross debt more than doubled to $63bn over the past year. Its free cash flow (after factoring in the cost of operations and maintaining capital assets) settled at minus $20bn in 2020. Operational fragility, meanwhile, extended beyond the max. Last quarter Boeing shipped just four 787 Dreamliners, after it discovered wrinkles on the plane's fuselage. Compensation claims for delayed deliveries resulted in a charge of up to $3bn. Boeing took a $6.5bn charge against another wide-body model, the 777x, when it pushed back delivery three years owing to uncertain demand for air travel (Economist 2021).

Boeing's research-and-development spending fell almost a quarter lower in 2020 than the prior year. To conserve cash, it closed a Seattle research center where it discovered innovations, such as the 787's lightweight carbon-composite. Capital expenses slumped from $1.7bn in 2019 to $1.3bn in 2020. Despite pandemic-related cuts, Airbus spent almost $2bn, leaving it with more resources to develop climate-friendlier aircraft (Economist 2021).

Airbus bagged 1,200 more orders than Boeing in 2015-19. Boeing needed to regain the trust of customers, which included many foreign airlines that looked askance at any sign that Boeing lacked credibility or at its continuing regulatory problems. It needed them to love the Max again, a task made harder by new allegations the Max's problems extended beyond its flight-control software. Boeing counted on its friends in government to offer a lifeline (Economist 2021).

Boeing paused deliveries of its 787 Dreamliner aircraft in May 2021 due to production quality issues. Boeing continued to work on issues to resume deliveries of aircraft. The COVID-19 pandemic's impact on demand for air travel impacted demand for commercial jets. Demand started to rise amid vaccine rollouts and the easing of restrictions (Johnston 2022).

Persistent supply chain disruptions occurred during 2022 third-quarter earnings updates from aerospace and defense firms. Boeing's top executives told investors that a paucity of engines prevented it from delivering much more than 20 of its 737 Max planes each month-even though airlines clamored for more of them (Tangel and Cameron 2022) Table 1.

Post pandemic resurgent air travel caught aircraft manufacturers and their supply chains off guard. It left parts makers unable to increase production quickly enough to provide components not only for new aircraft but also for planes in service (Tangel and Katz 2022).

Engines caused the big bottleneck. Engine makers, such as CFM International, a joint venture between General Electric Co. and Safran SA, operated about two months behind schedule on deliveries of new engines, while Pratt & Whitney and Rolls-Royce Holdings PLC faced delays (Tangel and Katz 2022). Other suppliers also struggled, such as a high-precision manufacturer which made blades and structural castings for engine makers (Tangel and Cameron 2022).

Boeing needed to take greater control of its supply chains. Boeing needed to own and control the primary technologies

Table 1. The Boeing Company Financials.

12 months ended	Revenues	Net earnings (loss)
Dec 31, 2023	77,794	-2,240
Dec 31, 2022	66,608	-5.05
Dec 31, 2021	62,286	-4,290
Dec 31, 2020	58,158	-11,940
Dec 31, 2019	76,559	-636
Dec 31, 2018	1,01,127	10,460
Dec 31, 2017	93,392	8,197
Dec 31, 2016	94,571	4,895
Dec 31, 2015	96,114	5,176
Dec 31, 2014	90,762	5,446
Dec 31, 2013	86,623	4,585
Dec 31, 2012	81,698	3,900
Dec 31, 2011	68,735	4,018
Dec 31, 2010	64,306	3,307
Dec 31, 2009	68,281	1,312
Dec 31, 2008	60,909	2,672
Dec 31, 2007	66,387	4,074
Dec 31, 2006	61,530	2,215
Dec 31, 2005	54,845	2,572
Dec 31, 2004	51.4	1,870
Dec 31, 2003	50.26	718
Dec 31, 2002	53.83	2,319
Dec 31, 2001	58.2	2,826
Dec 31, 2000	51.32	2,128
Dec 31, 1999	57.99	2,309
Dec 31, 1998	56.15	469
Dec 31, 1997	45.8	-178
Dec 31, 1996	35.45	1,347
Dec 31, 1995	32.96	682
Dec 31, 1994	21.92	856
Dec 31, 1993	25.44	1,242

Source: The Boeing Company, Boeing Income Statement 2019-2023Revenues and Net Income

behind the products that it made. It needed to reduce outsourcing, which created supply chain problems.

Boeing shares dropped almost 30% in 2022, underperforming rivals. Jetliner deliveries did not meet expectations and the defense business continued to lose money. Once again executives cited supply chain, labor shortages and inflation as difficulties (Tangel and Cameron 2022).

The End for Calhoun

Boeing's already miserable image got worse in 2024. A 787 Dreamliner plunged suddenly mid-flight, injuring dozens of passengers, after a pilot said he temporarily lost control of the aircraft. The pilot was able to recover and land the plane safely, but it's not yet clear what caused the LATAM flight from Australia to New Zealand to fall so dramatically (Goldman 2024).

The company's nonstop streak of bad news began the first weekend of the year, when part of an Alaska Airlines 737 Max blew off the side of the plane just after take-off. A preliminary federal investigation revealed that Boeing probably did not put the bolts in the so-called door plug that are designed to prevent the part from blowing off the plane (Goldman 2024).

Boeing expected long-term orders for new commercial jets to shrink from sanctions that targeted Russia after it invaded Ukraine. However, U.S. sanctions targeting Russia reduced the expected deliveries to airlines or other customers in Russia. Boeing no longer counted about 90 outstanding orders for commercial jets as firm purchase agreements, or about 2% of its overall backlog, under accounting rules. Boeing counted 141 net orders as no longer firm in March (Tangel 2022).

Boeing suspended ties with a major Russian titanium supplier to develop key airplane parts. This further heightened its supply chain problems. Boeing halted spare parts sales and maintenance services to Russian airlines that operated its jets (Tangel 2022).

But the bad news didn't stop there. In February, pilots on a United Airlines 737 Max reported that the flight controls jammed as the plane landed in Newark. The National Transportation Safety Board is investigating. Two weeks ago, the Federal Aviation Administration flagged safety issues with the de-icing equipment on 737 Max and 787 Dreamliner models that could cause engines to lose thrust. The FAA is allowing the planes to continue flying and Boeing said the problem does not pose an immediate safety risk (Goldman 2024).

Then, Boeing got more bad news: The NTSB said Boeing has not yet provided the company's records documenting the steps taken on the assembly line for the door plug replacement on the Alaska Airlines jet. Boeing's reason: Those records don't actually exist. And the FAA said Boeing's safety and quality problems extend beyond its inability to produce paperwork. Reviewing Boeing's production workflow and standards, FAA Administrator Mike Whitaker said Monday that the regulator found issues with "really important" aspects of Boeing's manufacturing and assembly line. The FAA has instructed the plane maker to submit a plan to fix its production problems by late May (Goldman 2024).

The company came into the year with an already bruised reputation. Restoring the confidence of airlines, regulators and passengers becomes more difficult with every new incident and bad headline (Goldman 2024).

After a disastrous beginning of 2024 Dave Calhoun announced he was leaving Boeing at the end of 2024. Boeing's chairman, Larry Kellner, would not stand for re-election as a board director. The board had elected former Qualcomm CEO Steve Mollenkopf to succeed him. The company also announced that Stan Deal, CEO of Boeing Commercial Airplanes, was retiring. Stephanie Pope, Boeing's chief operating officer since January, was taking his place effective immediately (Isidore 2024).

Boeing had been buffeted by more than five years of problems with its airplanes, including two fatal crashes of the 737 Max in 2018 and 2019 that killed 346 people, and most recently a door plug that blew out of the side of an Alaska Airlines 737 Max in January, leaving a gaping hole in the side of the plane. The problems have led to multiple groundings for safety issues and more than $31 billion in cumulative losses (Isidore 2024).

Calhoun's departure comes in the face of widespread criticism of the company by CEOs of many of the world's major airlines Boeing depends upon to buy its planes. CEOs of numerous airlines had asked to speak directly to the Boeing board of directors. The airlines were upset both by the quality of the planes they were getting from Boeing, and the fact that Boeing won't be able to deliver the planes they were counting on this year, as passenger demand continues to surge to record levels (Isidore 2024a).

It is difficult for airlines to shift to Airbus, which has a long backlog of jets it has already committed to building for its existing customer base. Any Boeing customer shifting to Airbus could find itself waiting until 2030 or beyond to get its planes delivered. Operating two types of aircraft of the same class was costly, since pilots were certified to fly specific aircraft, and most cannot shift back and forth between an Airbus and a Boeing without training. The airline needed to keep a supply of expensive spare parts on hand for every type of aircraft it operated (Isidore 2024a).

But the probes at Boeing are not limited to the FAA audit. A preliminary investigation found that the plane left the

Boeing factory in October without the four bolts needed to keep the door plug in place. While the NTSB has not identified who is at fault for the missing bolts. Boeing is also facing an investigation by the Justice Department, which could open it up to criminal liability, and upend a controversial deferred prosecution agreement the company reached in January 2021 to settle charges it defrauded the FAA during the original certification process for the 737 Max last decade. Boeing was days away from having that probation-like period end when the Alaska Air incident happened (Isidore 2024a).

Calhoun, 66, a long-time board member at Boeing, became chairman of the company in late 2019, when the board stripped his predecessor Dennis Muilenburg of that title. He was tapped as CEO after Muilenburg was ousted in December of 2019, starting in the job in January 2020 (Isidore 2024a).

Boeing was once known as a company that put engineering excellence ahead of financial performance, and produced planes that were the gold standard in the industry. Critics of the company say that focus has changed in the last 25 years, citing the 1997 merger with competitor McDonell Douglas for the shift in focus on saving money. Calhoun is one of several executives since that time with no engineering background, having served as senior managing director and head of portfolio operations at investing firm The Blackstone Group, as well as CEO of Nielsen after 26 years at General Electric. Calhoun, an accountant by training and a long time Boeing director, ascended as CEO in January of 2020 with a message that Boeing would be getting back to its roots and focusing on safety and quality. Even as the board heaped praise on Calhoun, Boeing's own customers started sounding off about their frustrations with the leadership (Isidore 2024a).

Under Calhoun, labor relations at Boeing had been badly frayed. The company laid off at least 16,000 employees in response to the pandemic and moved production of the 787 Dreamliner from its unionized plant in Washington to a non-unionized plant in South Carolina. Still, Calhoun held on, thanks to a loyal board and a business model that makes it virtually impossible for Boeing to lose customers or go bankrupt. Once again, Boeing finds itself in a crisis, looking for a new leader to steer it to a safe landing (Isidore 2024a).

Mr.Calhoun's successor will face an unenviable task. A comparison with the fortunes of Airbus highlights Boeing's slide. In 2017 the market value of the American firm was two and half times its only rival's; now it is roughly the same. Since 2019, when the entire 737 max fleet was grounded for nearly two years after two fatal accidents attributable to faulty software, Boeing's combined annual net losses have amounted to $24.5bn. In that period Airbus made profits of nearly $10bn. Boeing's orders of 5,700 planes are far below the 7,700 in the European firm's books (CNN 2024).

The roots of Boeing's many crises are summed up by Aviation Strategy, a consultancy. An "obsession with quarterly results and share price momentum" resulted in too much cash being returned to shareholders and too little put into developing new products or ensuring production quality. Between 2014 and 2020 Boeing handed out $61bn in dividends and share buy-backs. It was not just shareholders who benefited. So did managers, whose bonuses were tied to their employer's surging share price. Ron Epstein of Bank of America notes that a merger with McDonnell Douglas in 1997 foreshadowed a "cultural shift away from engineering excellence". Boeing began to favor short-term financial management in a long-term industry, while Airbus focused less on investors and more on its aircraft, which might have a life cycle measured in decades (CNN 2024).

While Boeing enjoyed significant financial success after the merger (Table 1), that success was based on cutting costs, outsourcing, and lack of attention to detail impact the quality of the production process and the final product. Further investment in engineering and design of new aircraft or updates of existing aircraft became subject to the constraints of the bean counters. Management lost sight of the fact that Boeing took pride in developing and producing aircraft that performed and met the expectations of pilots and commercial aviation. This approach lasted for more than twenty years after the merger and led to financial success for the firm, its shareholders, and top management. Unfortunately, the firm is a hollow shell trying to resurrect the 737 Max, 787, and 777X programs with no new commercial aircraft on the horizon. Furthermore, Boeing does not have the resources to develop a new aircraft nor the time since s to develop, certify and manufacture new aircraft.

Reversing the cultural slide will be the hardest job for the new CEO. It could take years. More immediately Mr.Calhoun's replacement will have to ramp up production of the 737 max and guide new variants of this and other, long-haul planes to certification. At the same time, he or she must prepare the ground for the next generation of short-haul passenger jets. Airlines are angry with Boeing for delivery delays of the 737 max. Regulators, awaiting Boeing's plan to improve quality control, have capped production at 38 a month. Boeing's troubles mean that it does not actually expect to hit that rate until later in the year, by which time Airbus may be making 65 of its competing a320s (CNN 2024).

Boeing cannot go inside to select the next CEO. The existing corporate culture became too entrenched over the last twenty plus years. Furthermore, the existing talent within the organization further contributed and endorsed the policies that led to this slide in the corporate culture. An outsider is needed to create a breath of fresh air to start the change.

The person must be a visionary who worked at firms known for having a strong corporate culture in manufacturing with outstanding core competencies in engineering, design, quality control and product development. This person could come from within the aerospace industry, but that is not a prerequisite.

Changing the culture will be a daunting task that will take years to reverse. The change must start by replacing key executives who can provide the necessary leadership throughout the company. This could take years.

Delays could have a lasting effect. Switching to Airbus would be no easy matter for airlines, not least because the European firm has no free delivery slots for its short-haul jets until the end of the decade. Yet a point could come when carriers feel they can no longer depend on Boeing. United Airlines is rumoured to be considering replacing an order for a larger version of the 737 max that is five years behind schedule and, with certification still pending, with no prospect of delivery (CNN 2024).

Boeing's reliance on its past reputation as an American industrial behemoth has passed. A struggling Boeing could open the door for challengers. COMAC, a Chinese one, has long-standing plans to break the duopoly, though so far without a plane that can truly compete with a Boeing or an Airbus. Embraer, a Brazilian maker of smaller regional jets, could also make a move into bigger aircraft (CNN 2024).

New short-haul jets, likely to enter service around 2035, are another priority. It is a huge and expensive task that Mr.Calhoun reckons will cost $50bn. To investors' consternation, that is nearly double the figure for Boeing's previous clean-sheet designs. Choosing the right technology is a task that Boeing has to get right. But some observers fear that the firm, which has not launched an all-new plane since the 787 in 2004, may have lost the institutional memory for such a huge undertaking (CNN 2024).

Boeing has lost many, if not most, of the core competencies that made it a premier aerospace company. These skills were marginalized through extensive outsourcing. Much of the talent behind these competencies is no longer employed at Boeing. Finding individuals with the necessary skills to restore the core competencies to restore confidence in Boeing will take considerable resources and years, neither of which Boeing has. Acquiring some of its key suppliers may be a way to speed up the process, again, which takes money which Boeing lacks (Hiltzik 2011).

The new boss will inherit other problems. A third of Boeing's revenues come from its defense-and-space arm. The division's profits used to insulate Boeing from the cycles of the passenger-jet business. In the past two years they have suffered losses. Boeing has mismanaged fixed-price development deals, even as the Pentagon increasingly favors these to conventional "cost-plus" contracts, which remove most financial risk from the contractor. Boeing has also fallen far behind Elon Musk's SpaceX, whose rockets are already serving the International Space Station. Starliner, the rival vehicle from Boeing, has yet to make a crewed test flight. (CNN 2024).

Boeing's already battered reputation took another hit at two Senate committee hearings Wednesday on Capitol Hill, with witnesses questioning how the company builds airplanes and the safety of those planes (Isidore and Wallace 2024).

One of the key witnesses was Boeing engineer Sam Salehpour, a whistleblower who said he's been threatened for bringing safety concerns to his managers over several years, but that he was testifying due to his belief that "they are putting out defective airplanes." Another witness, Ed Pierson, a former Boeing manager and the executive director of The Foundation for Aviation Safety, said the lack of paperwork that has been provided to National Transportation Safety Board investigators after a door plug blew out of a Boeing 737 Max flight by Alaska Airlines in January amounted to "a criminal cover-up. Records do exist documenting in detail the hectic work done on the Alaska Airlines airplane and Boeing's corporate leaders know it too, because they fought to withhold these same damning records after the two Max crashes," he said in his opening comments. But Boeing has yet to provide documentation to federal investigators of which employees worked on the door plug that blew off the Alaska Air flight due to it missing four bolts needed to hold the plug in place. Boeing recently said it has searched for records but believes its employees did not document their work (Isidore and Wallace 2024).

Investigators are probing whether Boeing employees failed to perform some quality inspections on its 787 jets, the Federal Aviation Administration said Monday. The investigation is to determine whether the inspections were conducted and "whether company employees may have falsified aircraft records," the FAA said. While the investigation takes place, Boeing employees will inspect the Dreamliners it has not yet been delivered to airline customers and will develop a plan for the planes that are currently flying, the FAA said. The FAA said Boeing "voluntarily informed us in April that it may not have completed required inspections to confirm adequate bonding and grounding where the wings join the fuselage on certain 787 Dreamliner airplanes" (Wallace 2024).

The Reckoning

An excessive focus on financial returns led Boeing to badly neglect two of its greatest resources: its people and its suppliers. First, in the 2010s, Boeing made a forceful effort to weaken its workforce's power. Aggressive moves, such as transferring production sites to new locations and

threatening to move additional work, reduced labor's negotiating power, resulting in minimal pay increases and terminated pension plans. Most damaging, then-CEO Jim McNerney systematically promoted non-technical people to executive positions, particularly on the board. Incredibly, the MAX was developed under him and the commercial unit CEO-neither of whom had a technical degree. Current CEO Dave Calhoun, also not an engineer, followed the same path, promoting people with similar finance backgrounds (Aboulafia 2024).

At the same time, the company went after its suppliers' profits. Programs like Partnering for Success called for consistent price reductions, even as demand increased. Boeing pursued its suppliers' product support business, further impacting their business models. Payment terms were increased to 120 days in many cases, up from around 30 days. The company announced a "no-fly list," implying that suppliers that didn't give in to Boeing's demands would not be used for future jets. Boeing even began an ill-advised program of vertical integration, aiming to replicate systems and components provided by some of its specialized suppliers, to further pressure them on price. Effectively, workers and suppliers were being crunched to provide rewards to Boeing shareholders. And in the short run, it worked great. In 2012, 19% of operating cash flow was being returned to shareholders in the form of dividends and buybacks. By 2015, this had ramped up to an astonishing 99%. It stayed in the 90% range until the two MAX crashes and the resulting MAX line shutdown. Between 2014 and 2018, the company rewarded investors with $53 billion in these returns. Senior executives, often compensated on the basis of stock returns, also did quite well (Aboulafia 2024). However, in the long cost cutting resulted in an underinvestment by the suppliers in the specialized assets to maintain quality and reliability.

The result of this strategy is plain to see: an under-resourced supply chain, and an equally under-resourced and badly alienated workforce. These have resulted in missed production targets, serious program delays, failed safety audits and embarrassing instances of shoddy workmanship. Regulatory and political scrutiny is increasing and will likely worsen. Boeing still has good people, impressive technologies, and great jetliners. The latter are in a duopoly with very high entry barriers, even if Airbus is quickly gaining market share. All that's needed is a new approach to management at the top (Aboulafia 2024).

If there is a new management team, it would be wise for them to learn from history. Treating suppliers and workers as partners would be a great start. Senior executives need to engage directly with them, spending time in factories, talking with the suppliers, engineers and machinists engaged in the company's core business. Instead of denying the need for any new products-as Calhoun bizarrely did in November 2022 when he said the company might not introduce any new models until the 2030s — they should be talking about new opportunities that would restore the company to industry leadership. A lot of this comes down to just showing up. The current approach of staying in office buildings and focusing on financial abstractions clearly isn't working (Aboulafia 2024).

Few companies have lost more than the $32 billion that Boeing lost in the last five years. Fewer companies could lose that kind of money and not be facing bankruptcy, or worse. That's because the company is part of a unique duopoly, one of only two manufacturers of full-size passenger jets in high demand by airlines. That means it can continue to sell, build, and deliver planes for many years to come, even with massive and well-documented problems. It's an industry with the highest possible barriers to entry and very strong demand for its products. But they've wasted a lot of that time (Isidore 2024b).

Boeing, despite its many woes, has a backlog of orders for more than 5,600 commercial jets, worth $529 billion. That's years' worth of orders. The problem is that Boeing has reduced its pace so much to address quality issues, it can't make enough planes a year to turn a profit. Boeing management says it is focused on fixing its well-documented safety and quality issues that led to an in-air fuselage blowout in January-rather than projecting when it will return to profitability (Isidore 2024b).

From the second quarter of 2019, Boeing reported core operating losses totalling $31.9 billion. Net losses in the same period came to $27 billion (Isidore 2024b).

No other company in the S&P has lost that much money over the past five years, according to Fact Set, which tracks financial results. Only two-Uber and cruise line operator Carnival Corp have even come close. And the massive losses have resulted in the company's debt level soaring, from $13 billion at the end of 2018 to $48 billion in 2024 (Isidore 2024b).

Further losses (See Exhibit 1) could plunge the company's debt into junk bond status for the first time. Moody's Ratings has said that even with improved financial performance, Boeing's cash flow will not be enough to cover $4.3 billion of debt coming due in 2025 and $8 billion due in 2026. Boeing likely will have to issue new debt to fund those shortfalls, according to Moody's (Isidore 2024b).

The best hope for shareholders, employees, managers, and customers may be for Boeing to be a takeover target. Only when it begins delivering better results will everyone be satisfied with Boeing's performance. However, Boeing lacks the deep pockets to make this happen (Economist 2021).

Back in February 1999, when Boeing's share price was low it was suggested that Boeing may be a takeover target. At that time General Electric was thought to be thought likely suitor. GE had grown close to Boeing as it developed a super-powerful jet engine at its own expense to power a new long-range version of Boeing's 777 (Economist 2021). The Boeing-GE merger never happened even though GE remained close to Boeing as its supplier of jet engines.

A suitor for Boeing may not be the solution since it takes time to integrate firms even under the best of circumstances. The Boeing-McDonnell-Douglas merger served as the perfect example. Likewise, all of the other consolidations that occurred within the defense industries in the 1990s suffered similar integration problems.

But Boeing has two advantages other companies don't have. First, even if all of Boeing's customers decide to shift from Boeing to Airbus, Airbus has a backlog of more than 8,000 commercial jet orders of its own and is projected to deliver only about 800 planes this year. Airlines face a years-long wait for plane orders placed today, perhaps as much as 10 years; this means that airlines that placed orders with Boeing aren't likely to cancel. If a new manufacturer tried to enter the field, it would take years and billions of dollars to come up with a competing model that would be certified to carry passengers worldwide. Second, even if customers could get their hands on Airbus jets right away, there are huge costs for Boeing customers to operate both their existing Boeing jets and a fleet of comparable Airbus planes at the same time. Airline pilots can only fly the jet on which they are certified; they cannot just switch between competing models. Airlines must keep an expensive supply of spare parts on hand to service the planes they do own. So once an airline has chosen a plane, like the 737 Max, it's very expensive to add a rival's version of that jet. But even with those built-in advantages, Boeing can't trail Airbus forever (Isidore 2024b).

That's one reason the question of who will lead Boeing next is such an important one. Calhoun, who has led the company since 2020, has announced his intention to retire by year's end. He said he has an internal candidate whom he would like to succeed him, but whom he has not identified. Others think it's crucial to the company's future that it goes outside the company to bring in a fresh perspective. Without a turnaround, the lead that Airbus has established in the wake of Boeing's problems over the last five years could become permanent. Then the advantages of a duopoly won't be enough to save Boeing from long-term decline (Isadore 2024b).

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