**Automation At Sirius**

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**Main Content**

Sirius Sky Star Airways is a low-cost carrier founded in 2010. Based out of Los Angelas, the airline has grown to rival other US based Carriers in the airline Industry. With a fleet of 160 aircraft and serving 320 destinations across North and Central America, the airline has established a reputation for its inflight service and experience, ranking in the top 10 globally. This airline has also become a leading US airline in recent times despite the heavy competition from the legacy carriers as well as rival JetBlue and notably the ultra-low-cost carriers Spirit Airlines as well as Frontier Airlines. However, the airline is currently at a crossroads, threatening its strategic position as a market leader in the US and potentially jeopardizing its status as a globally acclaimed airline. The recent COVID-19 pandemic forced the airline to scale back its operations, resulting in the selling of 20 of the aircraft as well as an end of service to certain key destinations. This caused the airline to experience some loss in key talent and in key revenue streams. To address this, the airline has decided to embark on an ambitious expansion to address this setback as well as go above and beyond its pre-pandemic success. But even this plan may be threatened by the key internal and external issues that currently plague the company.

As of 2024, recent supply chain disruptions at Airbus due to critical shortages of parts as well as labor shortages has impacted its ability to deliver jets in a timely manner. In fact, Boeing is no different either. This company is plagued by quality problems and facing a labor shortage as well as dealing with a slow unreliable production rate (Gates, 2024). This is a major issue for Sirius as the delivery of these jets are crucial to meeting the timeline of its expansion into new destinations. This delay also can impacts Sirius’ losses, forcing the airline to cancel various flights to key destinations in favor of focusing on more profit revenue routes more profitable than said key destination (Walker, 2024). Not only that, but it puts a major financial strain on Sirus, as maintenance costs required to maintain older aircraft skyrocket due to scarcer and scarcer parts as well as materials available. Another airline, Air New Zealand, is already taking parts off their newest delivered aircraft to just maintain older ones, as well as having parts that are meant to last up to a certain limit, going twice as long without spare replacements (Harper 2023). This striking similarity with other airlines situations is closely mirrored at Sirius. Supply chain disruptions are not the only problem that is impacting the airline. Growing pressure to implement sustainable practices at airlines around the world is now a must for any airlines attempting to compete in this space. In fact, it is projected that over decades in a study conducted at Roland Berger, that regulatory costs to airlines regarding carbon emissions will be an expensive cost to the airlines, and that the cost of sustainability transformation will be expensive cost for airlines (Hanke et al.). As a result, this threatens to expand Sirius’ financial constraints into a catastrophe if the airline fails to address this situation. Despite the advent of sustainable aviation fuel (SAF), it is still in its early stages but is marked by high production costs and scaling difficulties due to potential negative sustainable impacts (Lohawala & Wen, 2024, pp. 7-8). Clearly, this puts Sirius in a difficult position to assess whether to expand on sustainability initiatives or take a risk with sustainable aviation fuel (SAF). Next, Sirius must address another major critical issue: its hiring and labor. Presently, in the industry, there is a supply shortage of pilots and ground staff, that is expected to plague airlines into the 2030s (Heilakka & Murray, 2022, Uphues, 2023). A majority of this shortage can be attributed to early retirements at the height of pandemic, an aging workforce that is older than the mandatory retirement age for the industry, as well as unfavorable training costs (Heilakka & Murray, 2022, Murray & Green, 2021). Objectively, this outlook does not look favorable for Sirius, as these pilots and other key staff are needed to play a key role in its international expansion. This also endangers its financial stability as with such a shortage of workers, the necessary pilots not only needed for expansion, but also for its current routes will force the airline to cancel routes as well as in the process, experience a loss of money but also materials being wasted for these said flights. A clear-cut innovative solution needs to be devised if Sirius as a company is to survive the next decade and be a competitive US airline.

The answer to these obstacles lies in AI. In terms of the supply chain issues plaguing major aircraft manufacturers, AI has plenty of applications in that regards. Drawing from *Competing in the Age of AI: Strategy and leadership when algorithms and networks run the world* by Marco Iansiti and Karim R. Lakhani (2020), Sirius can modify its core to become an AI, data driven company in order to be able to adapt to continuous change throughout the industry. Also, the airline can look to Microsoft for inspiration in this endeavor. Perhaps the airline can partner with Microsoft in an effort to utilize its robust infrastructure and supply chain rather than investing in an costly supply chain of their own. (Iansiti & Lakhani, 2020, pp. 101-104). By partnering up with Microsoft, Sirius will have access to not only the ecosystem of the company but be able to also utilize the tools its possesses to make the necessary changes as well as improvise when it comes to supply chain disruptions. Microsoft Dynamics can be used for supply chain management. While the disruptions are external, the airline can focus on planning ways to streamline access to new aircraft with Dynamics as well as forecast delays and disruptions. Through this method, the airline can anticipate delays in deliveries and come up with a contingency plan to mitigate the effects of these disruptions (*Supply Chain Management: Microsoft Dynamics 365).* Through these well-prepared mitigations, the airline can save some money, take advantage of the leasing space if needed for new aircraft and reduce the chances of a major financial loss as a result. Dynamics also comes with other potential applications in the airline that will be discussed further in a later part. Another tool in Microsoft ecosystem the airline can effectively utilize is Power BI. Through the use of predictive analytics, as well as machine learning, Sirius can use Power BI to forecast demand on key routes that need new deliveries and assess through this analysis whether to lease an aircraft due to the said delivery delay or to reassign aircraft from less profitable routes to more profitable routes. Essentially, Power BI assists with data driven decision making and resource allocation in that regard (Analysis, *Improving supply chain efficiency with Power Bi,* 2024)*.* Another application for AI is in sustainability. Like before, Dynamics can be of major importance in this space. Known for its supply chain management tools, Sirius can leverage dynamics to forecast supply shortages in necessary maintenance inventories and plan for faster deliveries by timing material shortages with delivery of key materials disruptions (*Supply Chain Management: Microsoft Dynamics 365)*. This reduces the waste of materials as well as the maintenance downtime for Sirius significantly, allowing for efficient maintenance practices as well as potential reduction in maintenance costs. This also makes the aging fleet of aircraft Sirius has more up to standards. In addition, Power BI can be used by Sirius for its data visualization and forecasting abilities to take notes on the history of the routes taken by Sirius flights to destinations. Using these abilities, Sirius can determine the most efficient, and least fuel burn routes to reduce its emissions significantly (Kumar, 2023, *How route and aircraft management lowers fuel use and emissions*, 2024). Finally, AI and hiring is a much-needed discussion. As already mentioned, the industry is experiencing an labor shortage in recent times (Heilakka & Murray, 2022, Murray & Green, 2021). The process of hiring for Sirius centers on a behavioral interview to know the candidate, and a technical interview to test the candidate. Its been noted that these practices are determined to be ineffective. Many times these interview practices give the opportunity for candidates to sometimes lie about who they actually are. In other cases, candidates are subjected to bias’s that affect their ability to be hired because of those said bias (Parrish, 2020). Combined with the labor shortage affecting the industry, and it is evident that Sirius must take radical steps on this front (Heilakka & Murray, 2022, Murray & Green, 2021). A much-needed solution for Sirius might involve utilizing HireVue. HireVue is an enterprise level hiring solution that utilizes AI as part of its recruitment solution, including video interviews, assessments and beyond (*HireVue hiring platform: Video interviews, assessment, scheduling, AI, chatbot: Hirevue*). While this platform is critical, it does not fully solve the issue. A revamped hiring process for Sirius can perhaps eliminate some of the inconsistencies caused by its previous interview process. Part of this solution does involve one interview to assess the company’s impression of the candidate. Following the said interview, candidates that are selected are given the opportunity to work with Sirius on temporary employment. This employment is paid, and following said selection, candidates must sign a non-disclosure agreement (NDA) to ensure no important information is leaked. Following this, the temporary employees are trained (which is paid for by the airline) and employed for a certain time. At the end of the period, the airline evaluates the candidates for hire given the feedback from both employees and customers as well as key performance indicators that are tracked. This allows for a more improved selection bias without any of these candidates. Where AI is concerned, a combination of HireVue and Power BI will be utilized. HireVue will be used for its AI capabilities surrounding an ethical AI that analyzes the performance of the person being interviewed and gives feedback on the candidates for their performance. It does so by enabling effective decision making since it serves as an assistant to the human counterpart when evaluating interviews. Additionally, the algorithm is audited regularly to ensure no biasness is present (*HireVue hiring platform: Video interviews, assessment, scheduling, AI, chatbot: Hirevue*). In terms of Power BI, data can be gathered via forms in terms of employee performance and feedback to be able to then be visualized in Power BI to determine key metrics for HR as well as assess key performance indicators for individual employees (Aqsanoor, *Discovering employee insights with Power Bi: A guide to HR analytics* 2024). This also allows for a more accurate picture of the employee holistically, being able to determine if employees tell the truth based on their interviews but also assess their performance too. This allows for effective data driven decision-making using AI tools like Power BI.

Based off the challenges Sirius faces and the goals towards solving these pressing matters, it is evident that Sirius aligns with the Early Majority segment of the Technology Adoption Life Cycle (TALC). The Technology Adoption Life Cycle is a concept that has been popularized and introduced by Geoffrey More (2014) in *Crossing the Chasm*. This cycle describes the adoption of a new technology or framework over its lifetime in a sociological way. Going off the situation, Sirius falls into the Early Majority group. The Early Majority is characterized by their conservativeness to spending but are open to new ideas. Given that Sirius has not adopted Microsoft products yet, as well as the fact that it has not adopted any new major AI technology yet, preferring to wait for its maturity, postures the company effectively as an Early Majority (Arrington, 2022).

As gathered from the situation at Sirius and the proposed solutions, Sirius’s AI strategy revolves around partnerships and investment in key firms as well as their products rather than deriving a new product altogether. This not only saves the firm immensely in terms of cost, but also allows them to sustain themselves for potentially the short term until the situation in the airline industry can improve. While situational in nature, Sirius can use this strategy as a staging ground for long term planning and corrective actions. Fundamentally, this long term strategy can perhaps utilize its built business relationships to enter in joint ventures with firms in which it has an established business relationship with for key units and products that are needed to sustain the company on a more permanent basis. This can lead to more beneficial innovation and catapult the company into outpacing its competitors in terms of these innovations, advancements as well as improvements. This discussion leads to Sirius value networks.

Collaboration with key firms in value networks strengthens Sirius’s position in the market, enabling safe navigation of the strategic problems described above. Partnerships with Microsoft to leverage its ecosystem allows for major improvements to be made to the airlines hiring process, maintenance, planning and sustainability processes. With HireVue’s ethical AI, a major reduction in biasness as well as improved selection of key candidates can be made without jeopardizing talent. The incorporation of AI into the strategy of Sirius via these value network firms enables for a safe transition to a more AI centric company long term rather than a drastic and costly change. Finally, this value network leads to the conclusion.

Ultimately, the strategic problems plaguing Sirius in terms of external supply chain disruptions, sustainability regulation pressures and key needed improvements to the hiring process, can be solved by AI. This tool not only allows the company to address the challenges, as well as improve its processes and reduce costs, but also prepares the company to scale itself further with its ambitious plans to reclaim its glory and go above its previous iteration to further stand out as well as strengthen its place in the US airline industry. Additionally, this gives the opportunity to take the lead in AI integration long term through its partnerships with Microsoft and HireVue. To conclude this, a famous quote by Satya Nadella, a CEO at Microsoft aligns strongly with Sirius: “This next generation of AI will reshape every software category and every business, including our own. Although this new era promises great opportunity, it demands even greater responsibility from companies like ours.” (Taylor, 2024).

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