**Executive Summary**

The Women's National Basketball League (WNBA) is the first professional league and a frontrunner in professional women's sports, setting the standard for excellence and progress in professional women's athletics worldwide. As one of the biggest women's professional leagues, the WNBA has struggled to generate profit since the league's creation. The league relies on significant investment from the men's counterpart, the NBA, to keep afloat. This is a clear business problem because the league should be able to run independently and profit from its revenues. This report focuses on the numbers behind the WNBA, such as average attendance, the growth of the WNBA, viewership numbers, the number of games, and the revenue generated from ticket sales.

The report's key trends are that the WNBA suffered a severe overall decline due to the pandemic. However, the league is experiencing a rapid incline in attendance, viewership, ticket sales, and revenue. This is likely due to the league's growing popularity and generational talent such as Caitlin Clark, bringing in more fans. 2024 was the league's record high in attendance and ticket sales. Not only did attendance spike but there was also an increase in online viewership through TV viewership and social media. Overall, the WNBA is coming off a record-high season, and the league needs to capitalize on this new influx of excitement revolving around them.

This success was due to many factors such as increased player recognition, and building a bigger community surrounding the WNBA. However, with this strong growth, many issues need to be addressed to become profitable.

**Introduction of Business Problem**

The Women’s National Basketball League (WNBA) is the most renowned women’s professional league in the world. The league was established in 1996 and consists of 12 teams. It is home to the best players in the world, who all compete for a chance to win the Commissioner’s trophy. The WNBA is also a trailblazer in promoting gender equality in sports, as the league gives talented female athletes a platform to showcase their skills. The league has built a passionate fan base while showing its influence on society through its advocacy towards social issues. Despite all these positives, the WNBA struggles to bring in revenue, especially compared to other professional sports leagues. The WNBA consistently reports annual net losses, highlighting a clear business problem. Although the league has received significant investments from the NBA and big companies such as Nike, they are still unable to generate enough revenue to break even, let alone make a profit. One big issue is the WNBA’s inability to sell tickets. Low ticket sales are a big reason why the league is unable to make a profit and shows an opportunity for growth. In this report, there will be an analysis of WNBA attendance statistics and factors that relate to its revenue from 2019 to 2024.

**Description of Data**

The data available represents each WNBA team’s attendance numbers from each year since 2019. It also shows several different statistics on the topic, including total, average, high, and low attendance numbers from the regular season.

The data was sourced from the years: 2019, 2021, 2022, 2023, and 2024. This will allow for interpretation of what teams have grown over the years and the reasons why they have grown. There are several different variables considered within the data. The first one is total attendance, which measures the total amount of fans that attend each game. Next is average fans, which calculates the average amount of fans that attend games. Variables such as team record, team location, and number of recognizable players are explored further as well.

With the business problem focusing on a lack of ticket sales across the WNBA, analyzing data that breaks down attendance by team is essential. The data is also descriptive enough to cover the four types of analytics. Descriptive analytics tells you exact viewership numbers for each team, with averages, highs, and lows. For diagnostic analytics, there is information on the location of games for teams, so inferences can be made from correlations between strong and poor attendance numbers. For predictive analytics, there is historical data collected in the set, which provides indicators that can help predict next year's attendance numbers. For prescriptive analytics, the data allows for multi-year attendance numbers, so there is adequate info to see positive or negative trends to determine the next steps.

**Presentation of Results**

**Line Chart**

The line chart is the most effective tool to illustrate the WNBA’s growth, as it showcases trends and patterns over time using precise numerical data, making it easy to track progress, and identify shifts. The line chart also provides the most clarity when looking for trends, as the direction of the line represents the growth or decline in ticket sales and is easily observable (Exhibit 1). Furthermore, when looking at the slope of the line it depicts the prevalence of the trends over the years and the momentum going into the future. The chart's ability to visualize the rise and fall of ticket sales is directly correlated to the league's core business problem. By observing the direction and slope of the line, it allows the viewer to truly understand the upswing of the league while providing context to their current state. Overall, the line chart is optimal for presenting the growth of the WNBA as the line is easy to follow using general visual conventions such as good is up and down is bad, and shows clear trends regarding the data over the given years.

**Pie Chart**

To represent the viewership per year for the WNBA, the pie chart effectively visualizes which year had the most viewers. The main goal of a pie chart is to show the portion of how each category relates to each other and in proportion to the whole data set. The pie chart comprises five different sections, with each slice representing a different year. On the chart, the 2024 slice is visibly the largest by far, once again depicting the momentum and traction that the WNBA is gaining, making it imperative for the league to build off of this strong season (Exhibit 2). The pie chart shows what each represents to total viewership over the past five years. With the chart being easy to comprehend, it makes it the perfect data visualization tool to look at the timing of the WNBA’s success and strategically plan future steps.

**Heat Map**

Another data visualization tool used to help understand WNBA ticket sales is a heat map. This specific heat map looks at each team individually and highlights their average ticket sale per game each year since 2019 (Exhibit 3). Heat maps are extremely useful in identifying patterns when initially looking at the data since they also effectively present data in a simplistic and easy-to-follow manner based on its concentration. In the context of WNBA ticket sales, a darker colour represents a higher average attendance, with a lighter colour representing a lower one. A heat map is an appropriate choice of data visualization as it allows one to observe strong and weak seasons for each team's attendance number. When looking at specific teams, it gives a quick insight into the general trend of their attendance, which is useful to provide context when analyzing areas of growth. This map is helpful in the context of the business problem as it immediately highlights teams that can generate strong attendance and ones that need additional attention to attract more fans.

**Box and Whisker Chart**

The Box and Whisker Chart shows the spread of average ticket sales across WNBA teams. This chart is particularly useful for identifying outliers in a data set with one qualitative variable. The chart marks the maximum and minimum values in sales; belonging to Phoenix Mercury and Atlanta Dream respectively (Exhibit 4). The chart also shows the concentration of central values between the 25th and 75th percentile (upper quartile and lower quartile), which helps to offset the skew effect from any possible outliers on the mean. Upon observing the chart, it can be seen that there are no outliers in this dataset, which indicates that there is a relatively uniform distribution of sales across the WNBA league. The values of the mean and median are similar, with the mean being slightly lower than the median, indicating a minimal negative skew. Findings from the chart indicate that there is no specific team that contributes heavily to low ticket sales in the WNBA.

**Scatter Plot**

The scatter plot with a trend line represents the average ticket sale based on wins and losses in the WNBA. A trend line was utilized to display a potential correlation between the two variables: Average sales and wins/losses. In this scatter plot, the visualization shows that there is a positive correlation between the number of wins and average ticket sales. There is a slightly negative correlation between the higher number of losses and average ticket sales. This scatter plot contributes to the business problem where the low ticket sales and losses are contributors to the overall financial struggles of the WNBA.

**Business Insight Gained**

As previously mentioned, the WNBA saw a massive decline in attendance during pandemic times. However, there has been a significant upward trend in recent years, as visualized in *Exhibit 1.* The most significant factor that contributed to the surge in the WNBA’s popularity in 2024 was the increased interest in women’s basketball. In the 2024 NCAA women’s championship game, there was a 90% increase compared to the previous season. This excitement spilled over into the WNBA when the arrival of these high-profile rookies joined the league. Lastly, the WNBA has had many strategic marketing efforts, including enhanced campaigns and targeted social media outreach has successfully connected with a diverse demographic, increasing the league’s visibility.

As *Exhibit 1* visualized the WNBA as a whole, it is also crucial to understand which specific teams are contributing to its success and which teams have a lower attendance record. This is done through the heat map in *Exhibit 3.* The heat map effectively highlighted strong yearly growth from organizations such as Indiana Fever and Las Vegas Aces. Several factors contributed to this development, including increased recognizable players and team success. When looking at Indiana Fever’s attendance growth from 2023 to 2024, the key success factor for their season was the newly drafted Caitlin Clark, who increased average ticket sales by over 10,000. The map also identified teams that struggled to expand their fanbase, including the Atlanta Dream and Washington Mystics. Their lack of development can be attributed to poor team location, record, and a lack of recognizable players. *Exhibit 3* highlights individual team’s growth on a per-year basis effectively, and helps to identify areas of improvement for these struggling organizations.

The box and whisker chart in *Exhibit 4* helps distinguish between high-performing and low-performing teams, allowing for segregation into two groups. This enables the league to tailor their sales optimization strategies for each group, allowing for a pinpoint focus on lower-performing teams. By zooming in on teams with a lower average, the WNBA can identify specific factors that need to be worked on: like team performance, marketing efforts, or local market conditions. This allows for a detailed, highly efficient way to improve ticket sales.

Through the scatter plot in *Exhibit 5,* it is seen that there is a clear correlation between team wins and strong attendance numbers. There is also a correlation between team losses and weak attendance numbers. This demonstrates the importance of team success in relevance to ticket sales. This data signifies the importance of building a winning team in the WNBA. Building a strong roster provides an immediate solution to teams struggling to sell out arenas, and shows that fan interest drops as team performance does. While the league is always going to have both good and bad teams, this correlation offers teams an individual fix to poor fan engagement.

**Discussion of future steps**

Attendance figures are a key indicator of the league’s health, while also reflecting fan engagement, marketing, and overall growth. The WNBA attendance challenges over the years have revealed insights into broader issues that can impact viewership. These include societal attitudes toward women’s sports, economic fluctuations, and external events like the Covid-19 pandemic.

Enhancing the fan experience is crucial to boost attendance at WNBA games. Incorporating engaging activities such as in-game promotions, family-friendly events, and special giveaways will elevate the value of live game attendance, making it more appealing to a broader audience.

Another way the WNBA can maximize attendance numbers is by aligning game times to prevent conflict with other events in the city. Aligning games during times when people are more available such as later in the evening or scheduling the majority of games on weekends will allow for more in-game attendance. One thing that has increased viewership is the support from the NBA. The NBA already supports the WNBA with an annual endowment of over $15 million. Additionally, getting support from NBA players whether by attending games, through social media, or wearing WNBA merchandise can help further increase recognition.

Strengthening community ties is an essential strategy for increasing attendance and building fan loyalty. Initiatives such as basketball clinics, school outreach programs, and partnerships with local organizations will establish meaningful connections with the community. These efforts will not only increase the league’s presence but also foster youth participation, creating a pipeline of lifelong fans.

Future strategies should prioritize data-driven marketing. Analyzing attendance data to identify regional trends, demographic preferences, and growth areas will help ensure marketing resources are deployed effectively. Expanding media coverage is equally vital as broader visibility on popular streaming platforms and famous broadcasters will help to attract both casual and dedicated fans.

To maintain the momentum from the 2024 season, the league must continue innovating and engaging with its fans. Incorporating fan feedback and emphasizing interactive events and compelling content will help ensure sustained interest and growth.

**Conclusion**

After analyzing WNBA ticket sales from 2019 to 2024, there were some positives to take away. The league is rebounding better than ever following the pandemic, thanks to a rise in the popularity of the sport. New stars such as Caitlin Clark have made their way to the WNBA. With the help of these players, the league has an unprecedented level of excitement around it, resulting in more fans showing up to the games. There was also a clear correlation between team wins and attendance, showing managers the importance of building a good team financially. There is also a solid foundation for the league to continue to build off of the successful 2024 campaign. Through enhancing fan experience, picking better game times, and strengthening the women's basketball community, there are a variety of different ways the WNBA can continue to expand. Analyzing attendance data is a very useful exercise the WNBA should do. By doing so, the league can see areas of strength and weaknesses, and discover correlations as seen throughout this report. The best way to improve is to reflect and analyze historical data, which is something that the WNBA needs to do to continue growing women's basketball and break the gender barriers that exist within sports.

**Exhibits**

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| **Exhibit 1: Showcases the growth of the WNBA based on ticket sales from 2019-2024** |

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| **Exhibit 2: Shows a pie chart of how much viewership each year has contributed within the time frame** |

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| **Exhibit 3: Shows the average ticket sales per team each year in a heatmap** |

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| **Exhibit 4: Shows a box and whisker plot for average ticket sales by team.** |

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| **Exhibit 5: Showcases the average ticket sales based on wins and losses** |

**References**

*WNBA Attendance - across the Timeline*, www.acrossthetimeline.com/wnba/attendance.html#where=Any. Accessed 1 Dec. 2024.