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**MSDS-457**

## **Final Project - NBA Team Expansion in Las Vegas**

### **Introduction**

According to FanNation of Sports Illustrated, the NBA wanted to announce expansion teams in Las Vegas and Seattle before the start of the 2022-23 season, and while a formal announcement did not happen, NBA Commissioner Adam Silver said the league would “invariably expand” at some point (Staff 2022). Assuming the NBA were to move forward with the idea of expansion teams, Las Vegas could be an ideal location for one of the two additions. Recently, National Football (NFL) football team Oakland Raiders relocated (2020), National Hockey League (NHL) added the Vegas Golden Knights as an expansion team (2017), and the Women’s National Basketball Association (WNBA) team Utah Starzz relocated as the Las Vegas Aces (2018). Based on those changes in other professional sports leagues, there appears to be a market for an NBA team in Las Vegas as well.

This report includes a detailed analysis and proposal for an ownership group (to be later specified) to facilitate the purchase and creation of an NBA expansion team in Las Vegas. Although teams have relocated as recently as 2008, when the Seattle Supersonics moved to Oklahoma City and became the Thunder, the NBA has not added an expansion team since 2004. At that time, the Charlotte Bobcats were added to the NBA as the league’s 30th team, shortly after the Charlotte Hornets were relocated to New Orleans (NBA 2003). The time is now for the NBA to expand again, and this report illustrates why Las Vegas is the perfect city for the next organization. The key components of this report are 1) how to build a winning roster, 2) ticketing

and promotions strategy focused on the Las Vegas region, and 3) the financial and economic benefits of choosing Las Vegas.

### **Literature Review**

“A mathematical optimization framework for expansion draft decision making and analysis” by Kyle Booth, Timothy Chan, and Yusuf Shalaby analyze a mathematical programming approach to expansion draft optimization with a focus on the 2017 NHL expansion draft involving the Vegas Golden Knights. More specifically, the paper explains a novel mathematical optimization approach, including two models, to optimize expansion draft protection and selection decisions made by teams. The outputs were compared to the actual draft results. Based on the results, the authors concluded their framework provides a solid foundation for future expansion draft research and decision-making since it can balance performance with financial flexibility when constructing a team (Booth et al. 2019, 27-40). Similar to the research paper, this report accounts for financial flexibility and performance to determine possible outcomes through an optimization approach.

“Relocating Teams and Expanding Leagues in Professional Sports: How the Major Leagues Respond to Market Conditions” by Frank P. Jozsa and John J. Guthrie focused on the “why, where, and to what extent professional teams have moved or how leagues have expanded during the second half of the twentieth century.” The book specifically focuses on two major ideas. Firstly, it identifies and analyzes the demographic factors of metropolitan areas that influence decisions concerning relocation and expansion. This report focuses on understanding how the Las Vegas market can impact an NBA team’s ticket sales, revenue, and valuation through the analysis of existing teams in Las Vegas and teams across major leagues in similar

markets. The second topic the book focuses on is quantifying and evaluating the success of professional baseball, football, and basketball teams before and after relocating or expansion (Jozsa and Guthrie 1999). Similarly, this report looks at the initial performance of expansion teams across major leagues and the most recent performances, as well as how team performance impacts ticket prices and attendance.

WalletHub did a recent study to determine 2022's Best Sports Cities, which combined in-depth studies of best cities for basketball, football, baseball, soccer and hockey. Each individual study took into account several factors such as team performance, average ticket price, fan engagement, and attendance. Similarly, this report accounts for such factors through historical data to determine the attendance, ticket prices, and valuation of a Las Vegas NBA team (McCann 2022).

## **Methodology:**

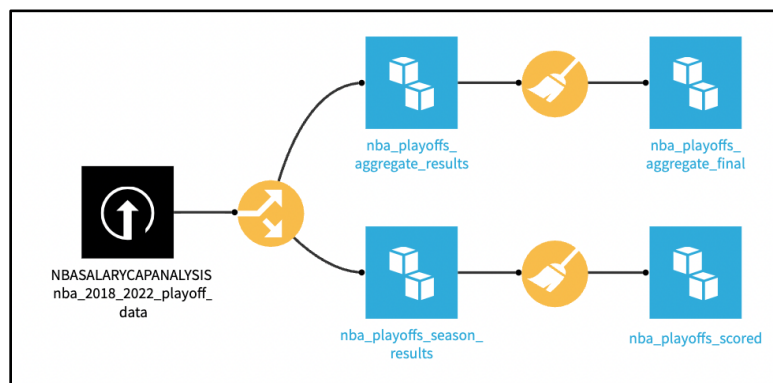
### **Section 1 - Building a Roster**

The methodology for this report is broken up into two sections – first, analyzing NBA team salary spending and comparing that against team performance data. The goal of the analysis is to illustrate whether spending more towards the salary cap impacts winning, and additionally, how to construct an optimal NBA roster based on salary ranges. Roster construction and team performance are critical elements for the success of any NBA organization but especially for an expansion team that needs to generate loyalty for a new fanbase.

To answer the question if spending more equates to winning, salary data was gathered from Spotrac for all 30 NBA teams for the past 5 seasons (2017-2018 to 2021-2022). This data includes a breakdown of active salary cap, dead cap, total cap and cap space. It also included

regular season win/loss percentage. The data was collected in spreadsheets and then uploaded to Dataiku, a platform for collaborative analytics and AI projects. A total of 150 records (30 NBA teams x five seasons worth of salary data) were captured in this initial dataset and used for downstream analysis (Spotrac n.d.). To gather additional team performance metrics, data was captured from the NBA for playoff wins/losses over the past 5 seasons (NBA n.d.). These datasets were merged together in Dataiku, using visual transformation recipes, and further processed for cleaner formatting [Figure 1.1]. The outputs of these analyses, which includes a series of charts and visualizations to illustrate the relationship between spending and winning, are included in the Results section below.

**Figure 1.1 - Data Collection and Cleaning Process in Dataiku**



A key element for the proposal for an NBA expansion team is how the roster would actually be constructed. As referenced in the introduction, an expansion draft similar to the most recent one in 2004 would be held in June 2023. The general rules would include that teams were allowed to protect eight players that Las Vegas could not select. Then, only one unprotected player was allowed to be picked from each team. Teams must have at least one unprotected player, even if they don't have eight players under contract. Restricted free agents drafted by Las

Vegas would become unrestricted free agents who could sign with Las Vegas or any other team. Las Vegas had to draft at least 14 players (and they could select as many as 29). They were not bound by the salary cap, but the contracts count toward their cap after the draft. Las Vegas' salary cap was only two-thirds of the league's salary cap. Players who were drafted couldn't be reacquired by their former team for one year. These rules largely fall in line with the 2004 expansion draft.

## **Section 2 - Ticketing and Promotions Strategy**

In order to determine an expansion team's ticketing and promotions strategy, other teams who share the same location are worth analyzing. The Las Vegas Raiders, Vegas Golden Knights, and Las Vegas Aces are other professional teams that can be studied to understand what works and what does not regarding ticketing and promotions. This includes understanding those teams' ability to acquire fans considering all those teams arrived in Las Vegas within the past five years. Articles focused around these teams were collected to acquire details on how the teams managed to build a fanbase and sell tickets.

To determine expected attendance numbers and expected performance, historical data across multiple leagues were collected. For each expansion team in the NBA, NFL, MLB, and NHL, the team's current and previous locations, year of addition, as well as wins and losses, postseason performance, arena names and capacity, total attendance, average attendance, and metro population of the expansion year were all collected (RetroSeasons, n.d.). Additionally, historical expansion fees data of the teams in their respective leagues were also collected. While expansion year data can help to predict first year numbers, data from the most recent seasons across the various leagues can help to provide accurate information for the current climate of the sports world. Therefore, wins, losses, total attendance for home and away games, total

attendance, metro population, television market size, stadium name and capacity, and ticket prices were collected for every NBA, NFL, MLB, and NHL team. Through the analysis of expansion year data and recent year data, expected attendance numbers and performance can be determined. After determining the potential revenue, market, stadium, as well as the value of the brand, using historical numbers and valuations of other teams, the valuation of the Las Vegas team can be determined similar to Forbes' approach, which provides a list of teams' current value, yearly value change, debt and value, revenue, and operating income (Forbes n.d.).

The data was collected from various sources and compiled into Excel spreadsheets, which were then used in Dataiku to interpret the information using the platform's built-in capabilities to create visualizations.

## **Results**

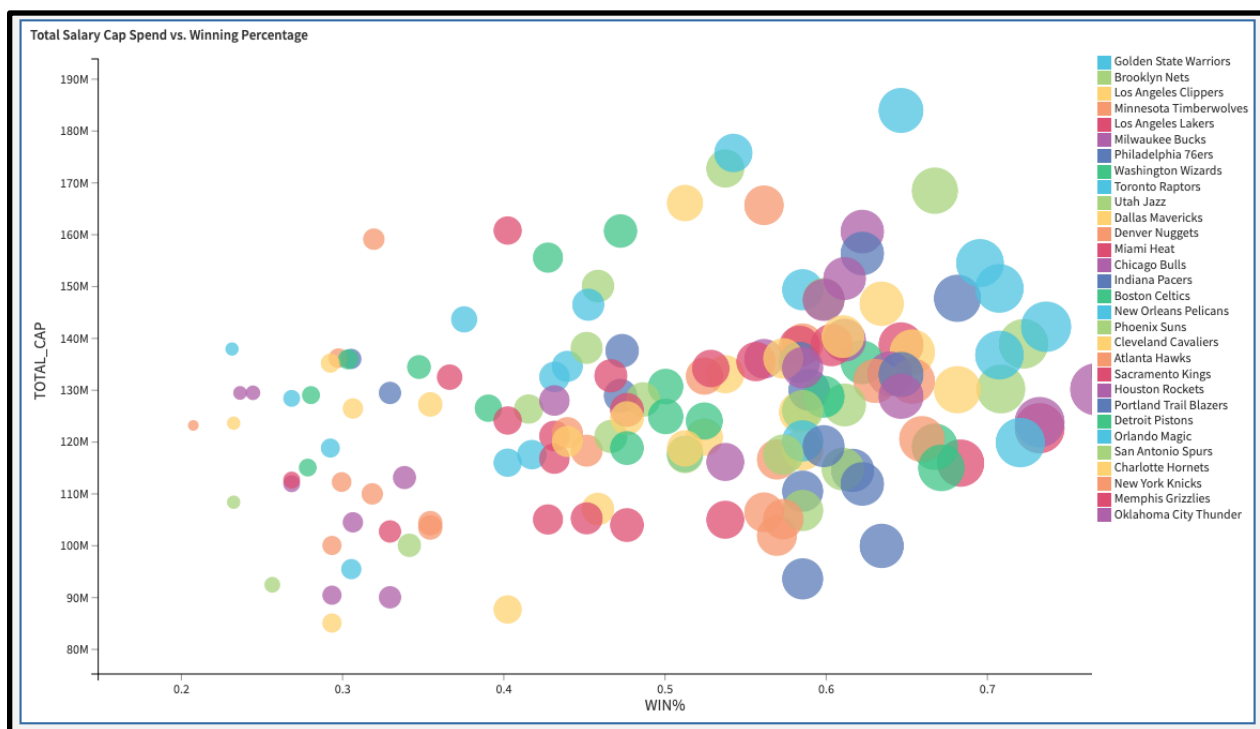
### **Section 1 - Building a Roster**

Although there are many factors that impact NBA team success, the analysis does show that there is a positive correlation between spending and winning. There are several ways to interpret this, as teams that spend close to or over the salary cap typically do so with the intention of fielding a competitive roster and can justify a potential luxury tax in the pursuit of winning. On the other hand, teams that are in "rebuild" or "tanking" mode typically spend less towards the salary cap in an effort to preserve capital for upcoming free agents, stash assets in the form of young or developmental players that are paid less, and evaluate other opportunities to strengthen the roster.

Figure 1.2 illustrates the relationship between spending and winning for NBA teams over the past five seasons. The Y-axis represents Total Salary Cap spend, in millions, and X-axis

indicates a team's winning percentage for that season. The size of the bubbles is proportional to the salary cap spend and colors are split by team, as indicated in the legend to the right. There are a few examples of teams in the lower right section of the chart, who have managed to win a high percentage of games without spending a significant amount of money on team salary (relative to salary cap and league averages). In the 2021-2022 season, the Memphis Grizzlies won nearly 70 percent of their games while only spending \$120 million towards salary, \$7 million less than the league average of \$127 million. In the 2020-2021 season, the Phoenix Suns won 71 percent of their games and made the NBA finals while only spending \$130 million towards salary.

**Figure 1.2 - NBA Spend vs. Win Analysis (2018 to 2022)**



Despite this correlation between spending and winning, it is not quite as simple as opening up the checkbook and expecting titles in return. There are a few examples of the opposite result; in the 2020-2021 season, the Minnesota Timberwolves won just 32 percent of their games but spent roughly \$160 million on salary. That was the fourth highest figure in the

league for that season. That Minnesota team was going through a rebuild, acquiring some promising young players like Karl Anthony Towns and Anthony Edwards through the draft, eventually had to pay Towns a bigger salary once his rookie deal expired, and wound up making the playoffs in the 2021-2022 season. Minnesota leadership had a plan for building up the roster and is starting to see the benefits of that approach.

As the next results section indicates, team valuation is tied more so to factors like city and market size, arena, and brand, etc. compared to just how well the team is performing. In order to build a reputable brand for a Las Vegas NBA team, especially in a city with many other sports and entertainment options, it is critical to build a roster that will draw attention, compete well and encourage locals to become part of a loyal fan base. The NBA is a star-driven league and “when it comes down to it, people want to see star players. We want to see the most physically gifted athletes. We want to see those who can do what most of us can’t. We want to see the best in the world” (Knox, 2012). The last five NBA champions (Golden State Warriors (x2), Milwaukee Bucks, Los Angeles Lakers and the Toronto Raptors) all have a major thing in common – the presence of at least one star player on the roster. Stephen Curry, Giannis Antetokounmpo, LeBron James, and Kawhi Leonard all led their teams to championship runs, and in doing so, validated their massive salaries of \$40 million or more a year, on average, which all rank in the top 10 in the league.

## **Section 2 - Ticketing and Promotions Strategy**

Before the start of the 2022-23 NFL season, Las Vegas Raiders’ home games were the most in demand on the secondary ticket market, and the average ticket on the secondary market was \$595 at the time (Akers 2022). That came after the Raiders lost in the Wildcard matchup and missed the Divisional playoffs the year before (NFL, n.d.). This came after being relocated in



2020, a season when majority of the teams, including Raiders, did not allow fans at games due to the COVID-19 pandemic. When fans returned to Allegiant Stadium, they contributed to the league's highest ticket revenue of \$119 million in 2021 despite the stadium having the third lowest capacity across the league. While the organization benefited from the buzz of being a new team in Las Vegas, the Raiders also implemented a successful ticketing strategy. The organization held back blocks of single game tickets, and when prices skyrocketed on the secondary market, the Raiders captured some of that upside through dynamic pricing with their remaining ticket inventory (Badenhausen 2022). The Raiders are a historic NFL team, but the Vegas Golden Knights have only been part of the NHL since 2017. In order to develop a fanbase, the team deployed a sales strategy to give locals the best chance at acquiring single-game tickets. When ticket sales began for the team's first season, only season ticket holders were eligible to purchase extra tickets in the morning, and then tickets were opened to all residents of Nevada, Utah, Idaho, Wyoming, and Montana – states within the team's television broadcast distribution territory, and then finally fans outside of those states (Granger 2017). According to latest data collected, Las Vegas had a TV market size of 834,000 and Salt Lake City had a TV market size of 1.1 million as of 2021 (Sports Media Watch, n.d.). Surrounding states of Nevada do not have many major professional sports teams outside the Utah Jazz in the NBA. This is a strategy critical to acquiring new fans as an expansion team, especially in Las Vegas, where visiting fans will want to be part of the experience since it is already a tourist location.

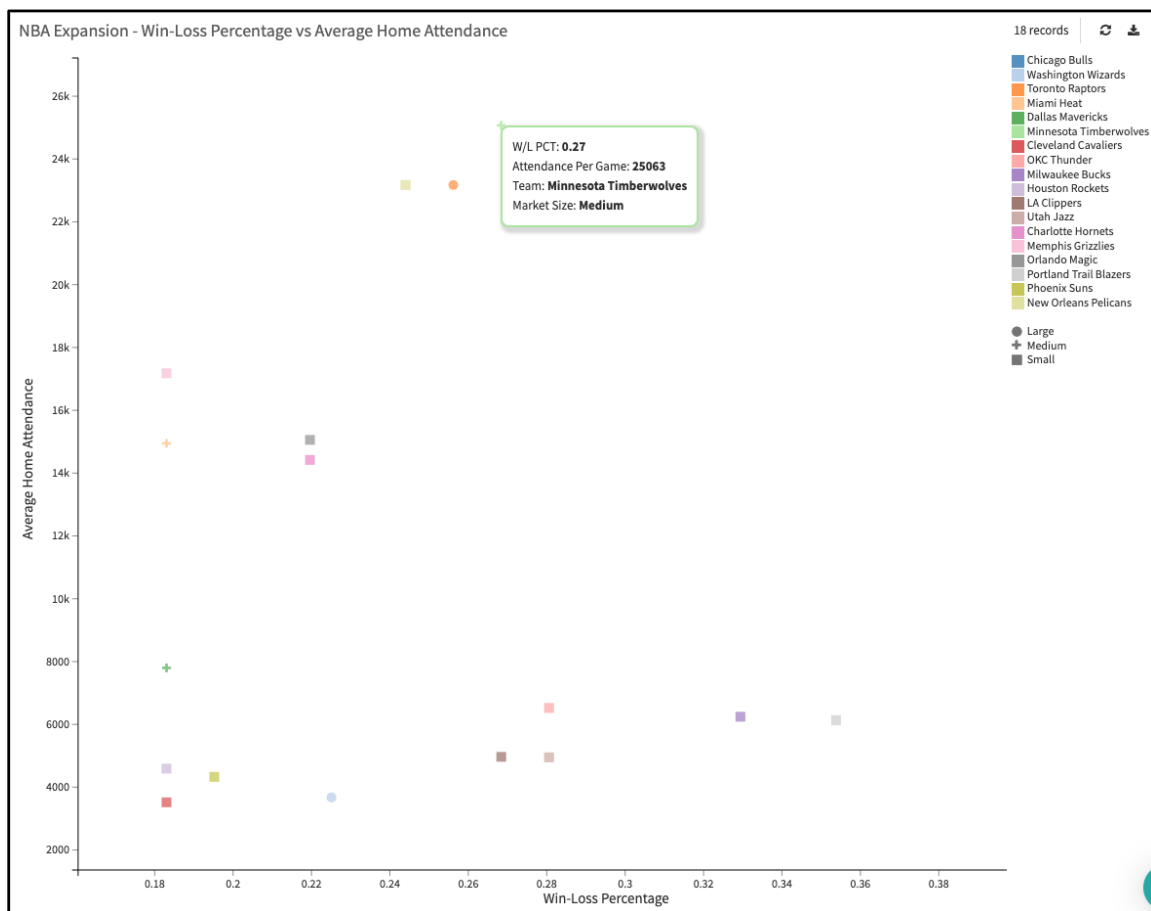
Based on the ideas that the Las Vegas Raiders and Vegas Golden Knights applied, the NBA expansion team in Las Vegas should also embrace dynamic ticketing. Through dynamic pricing, the expansion team can sell tickets at different prices depending on fans' willingness-to-pay prices (Rein, Shields, and Grossman 2014, 110). This approach essentially helps the

organization sell tickets at prices that reflect the true demand for the product (Harrison and Bukstein 2017, 158). The Raiders were able to take control of the market by holding on to tickets and implementing the dynamic pricing model. One of the biggest benefits an organization can gain is a better control of the market. Some analysts say that dynamic pricing exclusively addresses the recapture of lost ticket value from secondary markets (Harrison and Bukstein 2017, 9). Also, it is crucial to build a loyal fanbase, so another strategy to follow is one implemented by the Vegas Golden Knights. By giving priority to season ticket holders, who have a discount on those season tickets compared to single-game tickets, to buy additional tickets, followed by state residents and surrounding state residents, that base can be developed. However, there are certainly fans who are looking to visit Las Vegas, a popular attraction, so it is also important to take advantage of additional sales through promotions. Similar to Raiders, the NBA expansion team can work with hotels to provide packages and experiences. The Raiders work with Caesars Entertainment to provide rooms and events to visitors (Caesars Entertainment n.d.).

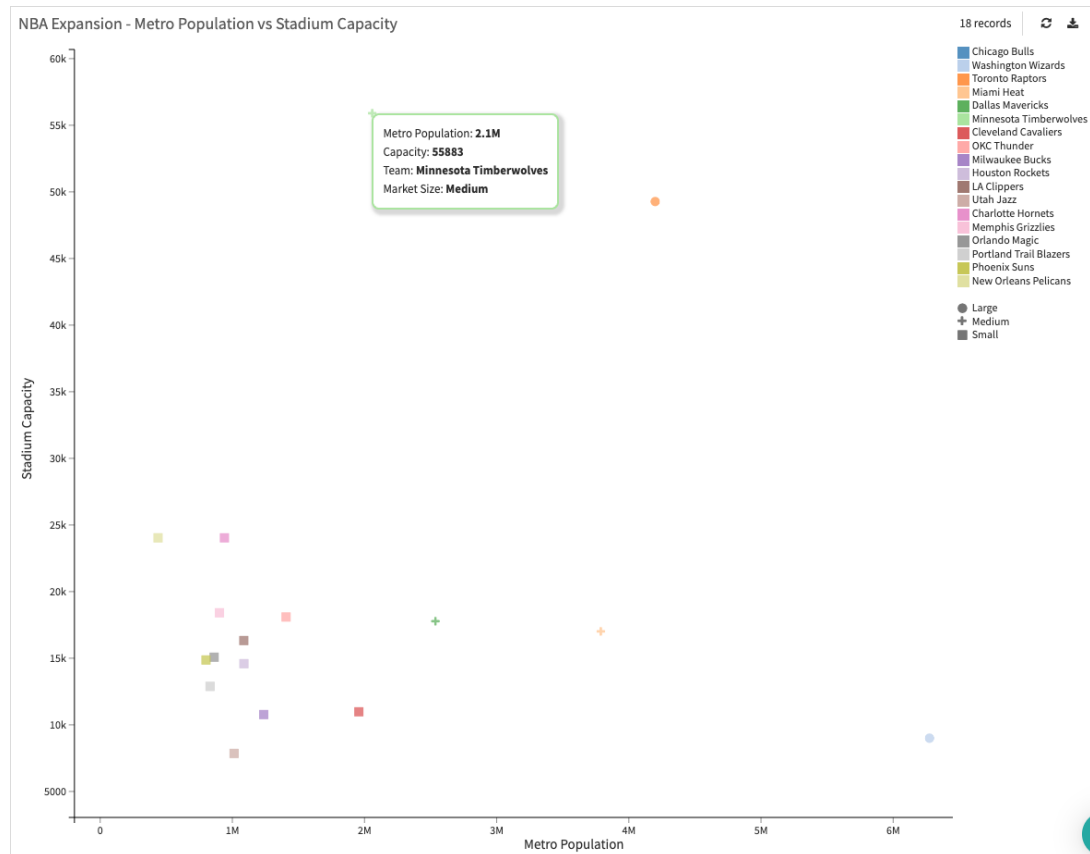
While tickets will likely sell due to the excitement of a new team in Las Vegas, it is also important to take into account the value fans feel like they are paying for. Customer value is derived from the maximum amount a customer will pay minus the amount they were charged. That customer needs to feel like they are receiving more value than the tickets cost in order to continue selling tickets (Rein, Shields, and Grossman 2014, 104). When looking at historical data, expansion teams generally do not perform well during their first year. Whether it is in the NBA, NHL, or MLB, new teams are below average in performance. However, many teams still found a way to sell tickets despite performance or having medium or small market size. Historically, the metro population of expansion teams also does not seem to impact stadium size. For example, when looking at the NBA team Minnesota Timberwolves, the team had a very low

win-loss percentage during its first year but still averaged over 25,000 in attendance, and metro population did not seem to make a difference despite being in a medium-sized market [Figures 1.3 and 1.4].

**Figure 1.3 - NBA Expansion - Win-Loss Percentage vs Average Home Attendance (First Year)**

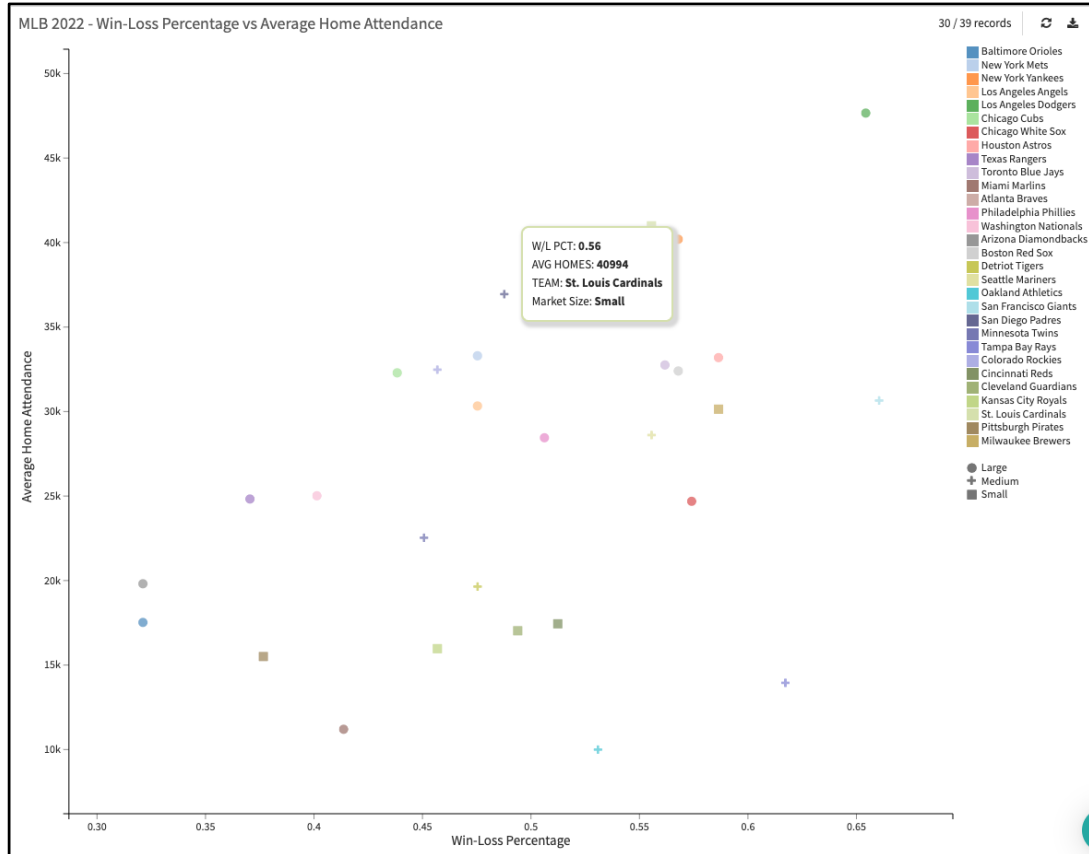


**Figure 1.4 - NBA Expansion - Metro Population vs Stadium Capacity**

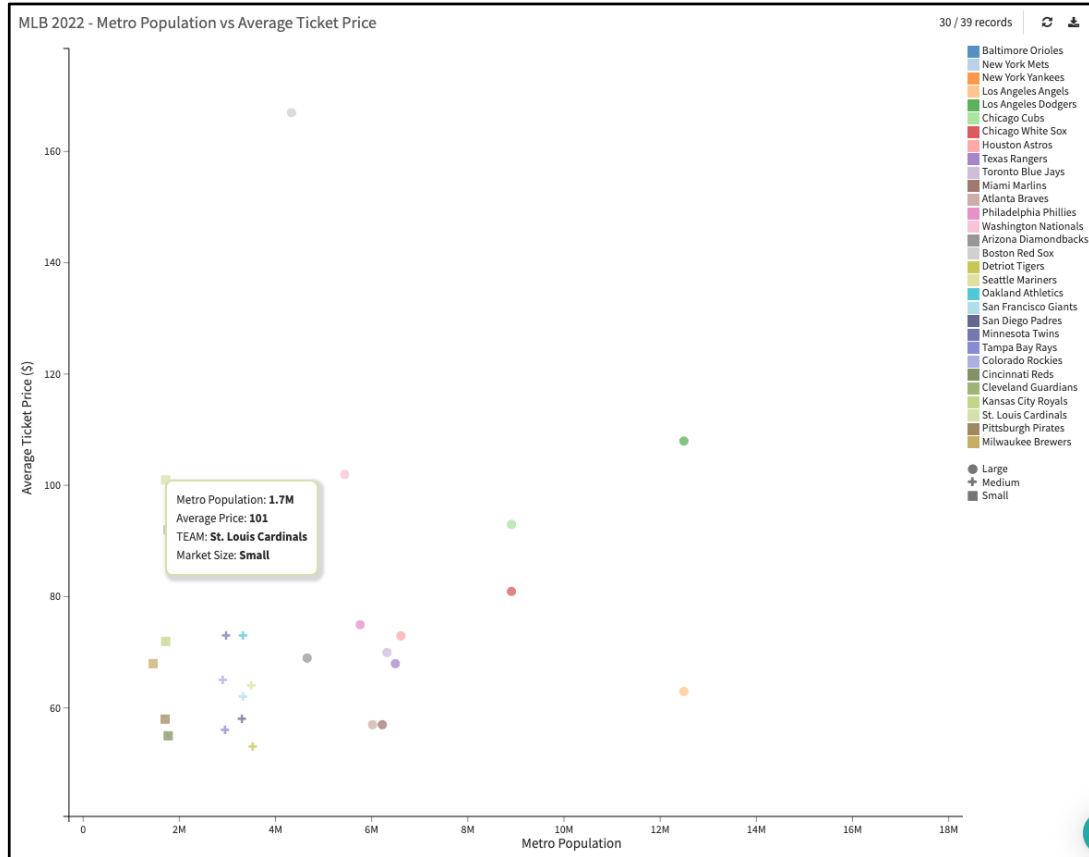


However, throughout the latest seasons of NBA, NFL, MLB, and NHL, the win-loss percentage has a big impact on the average home attendance and the average ticket price. For example, during the last season of MLB, the St. Louis Cardinals had one of the highest average home attendance and ticket prices despite being a small market team [Figures 1.3 and 1.4]. This trend was seen across the NBA, NFL, and NHL.

**Figure 1.5 - MLB 2022 - Win-Loss Percentage vs Average Home Attendance**



**Figure 1.6 - MLB 2022 Metro Population vs Average Ticket Price**



It is also important to note that across all leagues, the average ticket price was dependent on the metro population, and stadium capacity did not have an impact on prices. Based on historical data, the NBA expansion team is likely to be below average in performance and the metro population makes Las Vegas a medium market size [Table 1.0 and 1.1].

**Table 1.1 - NBA expansion teams**

Team	Previously	Relocated	Year	Wins	Losses	W/L PCT
Chicago Bulls	Chicago Bulls	No	1966	33	48	0.40740741
Washington Wizards	Chicago Packers	Yes	1961	18	62	0.225
Toronto Raptors	Toronto Raptors	No	1995	21	61	0.25609756
Miami Heat	Miami Heat	No	1988	15	67	0.18292683
Dallas Mavericks	Dallas Mavericks	No	1981	15	67	0.18292683
Minnesota Timberwolves	Minnesota Timberwolves	No	1989	22	60	0.26829268
Cleveland Cavaliers	Cleveland Cavaliers	No	1970	15	67	0.18292683
OKC Thunder	Seattle SuperSonics	Yes	1967	23	59	0.2804878
Milwaukee Bucks	Milwaukee Bucks	No	1968	27	55	0.32926829
Houston Rockets	San Diego Rockets	Yes	1967	15	67	0.18292683
LA Clippers	Buffalo Braves	Yes	1970	22	60	0.26829268
Utah Jazz	New Orleans Jazz	Yes	1974	23	59	0.2804878
Charlotte Hornets	Charlotte Bobcats	No	2004	18	64	0.2195122
Memphis Grizzlies	Vancouver Grizzlies	Yes	1995	15	67	0.18292683
Orlando Magic	Orlando Magic	No	1989	18	64	0.2195122
Portland Trail Blazers	Portland Trail Blazers	No	1970	29	53	0.35365854
Phoenix Suns	Phoenix Suns	No	1968	16	66	0.19512195
New Orleans Pelicans	Charlotte Hornets	Yes	1988	20	62	0.24390244

**Table 1.2 - 2022 NBA “Medium” market size teams**

TEAM	Wins	Losses	W/L PCT	TOTAL	Metro Population	Market Size	TV Market Size	Arena	Capacity	Capacity/Pop	AVG Price	Cheapest Price
Detroit Pistons	23	59	0.28049	663,556	3,521,000	Medium	1,863,000	Little Caesars Arena	20,332	0.0057745	\$102	\$12
Golden State Warriors	53	29	0.64634	740,624	3,318,000	Medium	2,653,000	Chase Center	18,064	0.00544424	\$589	\$43
Minnesota Timberwolves	46	36	0.56098	657,148	2,967,000	Medium	1,887,000	Target Center	18,798	0.00633569	\$91	\$22
Denver Nuggets	48	34	0.58537	695,262	2,897,000	Medium	1,798,000	Ball Arena	19,520	0.006738	\$200	\$11
San Antonio Spurs	34	48	0.41463	615,588	2,413,000	Medium	1,031,000	AT&T Center	18,418	0.00763282	\$163	\$9
Charlotte Hornets	43	39	0.52439	700,755	2,204,000	Medium	1,291,000	Spectrum Center	19,077	0.00865563	\$142	\$6
Portland Trail Blazers	27	55	0.32927	705,608	2,197,000	Medium	1,315,000	Moda Center	19,393	0.00882704	\$127	\$6
Sacramento Kings	30	52	0.36585	577,583	2,186,000	Medium	1,459,000	Golden 1 Center	17,608	0.00805489	\$126	\$11
Orlando Magic	22	60	0.26829	622,881	2,038,000	Medium	1,731,000	Amway Center	18,846	0.0092473	\$105	\$11

The analysis helped determine that the average ticket price should be based on teams in similar situations. When considering all the factors, an NBA team in a medium-sized market that is below average in performance should sell tickets between \$105 and \$142 on average with the cheapest tickets anywhere between \$6 and \$11 [Figure 1.1]. However, considering that the team would likely expect major buzz despite poor performance and a medium-sized market, the organization can sell tickets upwards of \$200.

Based on data collected from the latest complete NBA season, there are nine NBA teams that can be categorized as ones that have a medium-sized market based on metro population. A metro population greater than four million was determined to be a large market, a market below

four million metro population was determined to be medium, and a market below two million metro population was determined to be small. Las Vegas has a metro population of 2,839,000 and a TV market size of 834,000. Similar organizations fitting those numbers include the Orlando Magic, Minnesota Timberwolves, and the Denver Nuggets. However, all those teams have much higher TV market sizes [Table 1.1]. According to Forbes, Magic have a valuation of \$1.85 billion, Timberwolves have a valuation of \$1.67 billion, and the Nuggets have a valuation of \$1.93 billion, which puts all the organizations in the bottom third of the league. However, the Raiders are valued at \$5.1 billion, which may have a lot to do with its historic past and previous location, Oakland. When valuing a team, Forbes considers shared revenue, city and market size, arena, and brand (Forbes n.d.).

In 2021, Adam Silver said a \$2.5 billion expansion fee would be “very low” (Helin 2021). It is likely that an expansion team would accrue debt, which can also add to the overall value. Based on the NBA teams in similar markets, a reasonable valuation for a Las Vegas expansion team can be around \$2 billion. Considering other teams in similar markets, the team can expect around \$275 million to \$300 million in revenue, \$70 million in operating income, \$140 million in player expenses, and anywhere between \$50 million and \$70 million in gate receipts (Forbes n.d.). When considering those values, the sale price five years after being created can be estimated using the discounted cash flow analysis from “Sports Analytics and Data Science” by Thomas W. Miller. “When a firm evaluates alternative investment projects, it adjusts for its cost of capital, which is a linear combination of interest rate and dividend rate paid to creditors and stockholders, respectively.” To calculate the present value, the following formula was used:  $Y = \frac{X}{(1+r)^N}$ , where Y is the present value, X is the amount received at the end of N periods, and r is the discount rate, which corresponds to the return on investment (ROI) (Miller



2015, 141-143). Based on the analysis, it is best to hold on to the organization for the next five years and implement cost control. When considering the possibility of a \$2 billion valuation currently, the team can be worth slightly more than that in the future with a discount rate of five percent [Table 1.3 and Figure 1.7]. However, the discount rate and probability values need to be adjusted after determining the true values that are accounted for in the model.

**Table 1.3 - Discounted Cash Flow Analysis of NBA expansion team in Las Vegas**

Outcome A: \$2.0 Billion Sales Price after Five Years, No Cost Control						
				Cash In-Out	Discounted	
Index of Year	Season	Cash In (\$ millions)	Cash Out (\$ millions)	(\$ millions)	Cash In-Out	
	0 2022-23	140	160	-20	-19.047619	
	1 2023-24	150	170	-20	-19.047619	
	2 2024-25	160	180	-20	-19.047619	
	3 2026-27	170	190	-20	-19.047619	
	4 2027-28	180	200	-20	-19.047619	
	4 Sale	4100	0	2000	1904.7619	
Discount Rate (%): 5			Net Present Value		1809.52381	
Outcome B: \$2.0 Billion Sales Price after Five Years, Cost Control						
				Cash In-Out	Discounted	
Index of Year	Season	Cash In (\$ millions)	Cash Out (\$ millions)	(\$ millions)	Cash In-Out	
	0 2022-23	140	160	-20	-19.047619	
	1 2023-24	150	160	-10	-9.5238095	
	2 2024-25	160	160	0	0	
	3 2026-27	170	160	10	9.52380952	
	4 2027-28	180	160	20	19.047619	
	4 Sale	4100	0	2000	1904.7619	
Discount Rate (%): 5			Net Present Value		1904.7619	
Outcome B: \$3.0 Billion Sales Price after Five Years, Cost Control						
				Cash In-Out	Discounted	
Index of Year	Season	Cash In (\$ millions)	Cash Out (\$ millions)	(\$ millions)	Cash In-Out	
	0 2022-23	140	160	-20	-19.047619	
	1 2023-24	150	160	-10	-9.5238095	
	2 2024-25	160	160	0	0	
	3 2026-27	170	160	10	9.52380952	
	4 2027-28	180	160	20	19.047619	
	4 Sale	5000	0	3000	2857.14286	
Discount Rate (%): 5			Net Present Value		2857.14286	
Cash In = Operating Income (TV Deals + Sponsorships) + Gate Receipts = 70 + 70						
Cash Out = Player expenses + Operating Costs = 160 (300 - 140)						

Possible Outcomes	Net Present Value (\$ million)	Probability	Probability x Net Present Value (\$ millions)
Outcome A: \$2.0 Billion Sale, No Cost Control	1809.52381	0.2	361.904762
Outcome B: \$4.0 Billion Sale, Cost Control	1904.7619	0.5	952.380952
Outcome C: \$3.9 Billion Sale, Cost Control	2857.14286	0.3	857.142857
Expected Value			2171.428571

Decision: Hold Chicago Bulls for 5 years

Possible Outcomes	Net Present Value (\$ million)	Probability	Probability x Net Present Value (\$ millions)
Outcome A: \$4 Billion Sale, No Cost Control	3485.8	0.2	697.16
Outcome B: \$4 Billion Sale, Cost Control	3541.18	0.5	1770.59
Outcome C: \$5 Billion Sale, Cost Control	3948.26	0.3	1184.48
Expected Value			3652.23

Choices

- A: Gain (mil) 361.904762
- B: Gain (mil) 952.380952
- C: Gain (mil) 857.142857

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graph LR
    Root(( )) --> A[A: Gain (mil)  
361.904762]
    Root --> B[B: Gain (mil)  
952.380952]
    B --> C[C: Gain (mil)  
857.142857]
  
```

Hold Chicago Bulls

## Roster Construction

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Kristaps Porzingis, Nikola Vucevic or D'Angelo Russell. Quality veterans like Kevin Love, Draymond Green and Al Horford will also be free agents and could feasibly be signed for less than their current salaries.

In addition to the recommendations made above for 2023 roster construction, there is a monumental opportunity in 2024. LeBron James becomes a free agent and despite nearing the age of 40, has indicated that he wants to continue playing until his son, Bronny James Jr., is also in the NBA. There is a decent chance that LeBron resigns on a smaller deal with the Lakers, but he has also expressed interest in owning an NBA franchise, and this is the perfect opportunity to make that happen. The primary ownership group for this new franchise should aggressively pursue LeBron James to play his final few years for the team, and then assume a part-ownership role (in whatever capacity he prefers). In doing so, this would elevate the chances of landing another star player, like James Harden or Kyrie Irving, and cement Las Vegas as a destination for other top players around the league. Surrounding LeBron with two or three years of Harden or Irving, and a bevy of young talent acquired through the expansion draft, would go a long way in solving both the short-term and long-term ambitions of the new franchise. Compete now, build a loyal fanbase, generate market share, and cement the team as a new leader in the NBA.

In terms of limitations for this analysis, roster construction projections for a new franchise are largely impacted by the outcome of the expansion draft and subsequent decisions of free agents. While the ideal scenario would be landing all-star caliber players in the next two free agency classes, that is far from a guarantee. Analysis for optimal roster construction could be taken another step further by categorizing players into one of four salary ranges and then evaluating the performance of other teams with the same roster makeup. Weights could be given to each of those salary ranges — for example, an all-star would be given a 10 value in terms of

impacting winning while the lower salary range would be a one. Constrained optimization could then be employed to maximize an objective function of finding the best “win impact” score with the constraint of salary cap hits for each player. Additionally, data for the past five seasons could be expanded to the past 10 or 20 seasons to evaluate the relationship between spending and winning over a longer period of time in the NBA.

### **Ticketing and Promotions Strategy**

According to in-depth analysis, it is highly likely that an expansion team has a losing season. However, research indicates that the use of a dynamic pricing model can help to curb the issue by providing a product with a value customers are willing to pay for. Furthermore, it is best that the NBA expansion team in Las Vegas hold on to tickets in order to determine the value of the secondary market and capture additional revenue. When it comes to promotions, the team should consider utilizing the location to its advantage. Considering Las Vegas is historically a tourist destination and people are looking to spend money, the team can partner up with other businesses like hotels to provide package deals and incentives to attend games as visitors.

Recent data shows that team performance and metro population impact average ticket prices across all major leagues. Also, analysis shows that the average home attendance is dependent on performance, but this does not necessarily hold weight for a first-year team that has the ability to attract fans to a new location. A Las Vegas NBA team should consider having an arena that holds 19,000 to 20,000 fans, and with the use of dynamic pricing, tickets should be sold around \$102 to \$200 on average with the cheapest tickets going between \$6 and \$22.

When accounting for a team’s expansion fee, revenue, costs to operate, sponsorships and deals, stadium, and market size, the estimated valuation can be around \$2 billion. Ownership should consider holding on to the team for the next five years, and the sale price should increase.

The valuation calculations were done based on other teams in similar markets, and the discount rate may need to be adjusted. Ultimately, the valuation analysis indicates that it is worth investing in a Las Vegas NBA expansion team.

One of the limitations of the current ticketing and promotion analysis is that it looks at the first year of expansion teams across major professional leagues and the most recent seasons. However, this does not provide a strong indication of how an expansion team would do after the first year. Another limitation is that the analysis does not include data from the WNBA and MLS leagues. In the future, the data collected needs to be at least the first 10 seasons of every team across every league. Analyzing data across such a range can help to find patterns that can be copied, determine how ticket prices and attendance fluctuates, and how a team develops a strong fanbase. Also, the future research should include data from the WNBA and MLS, especially because both those leagues have Las Vegas teams that can be further analyzed to gain insights into the locations market value, attendance, ticketing, and promotions. The next steps would include not only collecting data, but also developing a model to accurately predict attendance, ticket sales, and valuation based on the factors analyzed in the current research.

## Website Concept:



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