A diagram of a project management

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**JPace Construction Company Case**

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**ISM-678**

**Final Semester**

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**Date Submitted: 03-06-2025**

***“I pledge that I have neither received help from nor given help to anyone on this assignment.” “I did not copy material directly from the Internet without proper attribution.”***

***-Nisha Patil***

**Overview of the Case:**

JPace Construction has a contract to build a 30,000-seat soccer stadium in Greensboro, NC, facing a tight deadline with penalties for delays. A potential union strike and severe December weather threaten the project timeline. JPace is considering these four proposals: 1) take no action and hope for the best 2) expedite the roof 3) expedite seat gallery supports or 4) expedite both seat gallery supports and field filling. Each proposal has different costs and impacts on the schedule, requiring careful analysis to minimize risk and maximize profitability. To complete this project on time, we must consider the internal project deadline is 48 weeks, while the official deadline is of 52 weeks.

**Proposal 1**

This proposal assumes that there will be no strike and no extreme weather conditions, which is highly uncertain given the circumstances. The main advantage of this proposal is that there’s no strike or heating required then the project costs will remain at the base level of $315,000. But, this proposal carries significant risks. There is a 50% chance of a labor strike, and in the event of an 8-week strike, the company will face $8,000 in overhead costs and $46,000 in penalties. A 12-week strike would be even more costly, leading to $12,000 in overhead costs and $92,000 in penalties. Additionally, if December is colder than expected, there will be an extra $2,250 heating cost. Overall, this proposal has the highest risk of delays and penalties, which can significantly reduce profits. Given the probability of a strike and the potential financial impact, this proposal is too risky and not recommended.

**Gantt Chart for Proposal 1:**

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**Proposal 2**

This proposal focuses on expediting the roofing process by cutting six weeks through overtime. As many of the other tasks are dependent on the roof’s completion that’s why this is a critical part of the project. The advantage of this approach is that it reduces risks related to roofing delays which ensuring smoother progress. The expected cost ($269,125.38) is slightly lower than Proposal 1, making it a slightly safer option. Also, if there are no major delays, the company can still achieve a profit of $304,000. But there are still drawbacks. The $11,000 cost for overtime work adds to the budget, and this proposal does not eliminate risks associated with labor strikes. If an 8-week or 12-week strike occurs, the company still faces high penalties and overhead costs. Also, this proposal does not impact the overall project timeline, meaning a strike can still significantly delay completion.

**Gantt Chart for Proposal 2:**

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**Proposal 3**

This proposal involves expediting the seat gallery supports, an important component of the project, which helps improve the overall timeline. Because of the highest PERT value compared to all three proposals, that makes it the best choice for the expected financial return. It reduces the risk of major delays in case of a strike, and this is the biggest advantage of this proposal. The penalties in the event of a strike are also much lower than in previous proposals (proposal 1& 2). By finishing important tasks early, this proposal avoids extra heating costs and reducing the financial risks. The main disadvantage of this proposal is the higher crashing cost of $18,000, but this is justified by the significant reduction in overall project risk and cost. Hence, this proposal balances the cost-effectiveness, risk mitigation, and timeline improvements.

**Gantt Chart for Proposal 3:**

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**Proposal 4**

This proposal builds on Proposal 3 by expediting both the seat gallery supports and field fitting, further reducing the project's vulnerability to delays. Just like Proposal 3, it significantly lowers penalties associated with a labor strike, with the same reduced penalties of $2,000 (8-week strike) and $6,000 (12-week strike). Also, this proposal ensures that critical tasks are completed before winter, eliminating heating costs. And the main disadvantage of this approach is the higher crashing cost of $27,000, which makes it the most expensive option. Although it effectively minimizes project delays, its expected cost ($282,950) is slightly higher than Proposal 3 ($291,950), without significantly better benefits. While this proposal is still a good option, it is less cost-effective than Proposal 3, making it a less optimal choice.

**Gantt Chart for Proposal 4:**

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**Following are the calculations of 4 proposals with No strike, 8-weeks strike, 12-weeks strike, overhead, penalty and probabilities*.***

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Based on all calculations and observations, Ms. Spencer should carefully consider potential fluctuations in material costs, as they could lead to delays in the delivery of essential materials. Also, extreme weather events, such as hurricanes in North Carolina, could impact the project timeline and progress. Monitoring these risks closely and having contingency plans in place will help ensure smoother execution.

Labor strikes among union workers are another major concern. Effective negotiations will be crucial to maintaining a cooperative work environment and preventing disruptions. A balanced approach is necessary to address workers’ concerns while keeping the project on track. Political factors also play a role, as this is a high-profile project that affects the City of Greensboro’s plans to attract a soccer franchise. Any delays or mismanagement could harm JPace Construction’s reputation and future business opportunities. Additionally, organizational challenges such as worker morale and productivity must be managed carefully, especially if overtime or additional workloads are required.

After reviewing all the four proposals, Proposal 3 is the best option. It has a high PERT value of $288,800, the best balance between cost and risk, and a shorter completion time. While Proposal 2 is a more cost-effective option, Proposal 3 reduces risks significantly and keeps the project within schedule, even in worst-case scenarios. So, my recommendation is to proceed with Proposal 3, while keeping contingency plans in place for labor strikes, material cost fluctuations, and extreme weather. This approach will provide the best opportunity to complete the project on time, control costs, and maintain JPace Construction’s reputation.