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MIS 2501

**Flash Research Assignment:** Data Centers and Networking

By implementing a Tier III data center, our company can gain net benefits of over $13,229,056 in a three-year period. Moreover, a Tier III data center also increases the availability of the server from 99.67% to 99.98%, which will decrease the unavailable time period and limit our downtime cost to $1,555,776 per year. Therefore, investing $35,000,000 in a Tier III data center is a wise decision to reduce cost and improve our business operation efficiency.

Currently, our Tier I data center has non- redundant capacity components and a non-redundant distribution path that only contains a 99.67% availability. With 99.67% availability, the company faces many different issues with engine generators and cooling. By updating to a Tier III data center, the availability period increases from 99.67 % to 99.98% which will limit the downtime from 1734.48 to 105.12 minutes. Furthermore, the Tier III data center also has N+1 Redundancy capacity components and multiple independent distribution paths. This means that the data center is available to build up a backup system to prevent any accidental events, which includes issues with the engine generator, UPS modules, cooling unit, etc.

The average loss per minutes is about $14,800 and with approximately 1,734 minutes of downtime per year, resulting in a total revenue loss of $25,670,304 per year. On the other hand, by updating to Tier III data center, we will only face approximately 105 minutes of downtime which will only cost $1,555,776 per year. Implementing a Tier III data center will cost a total of $35,000,000 in a three-year period, but after Tier III data center installation is completed, it will result in a total $48,000,000 benefit over a three-year period. Moreover, by comparing the result of a Tier III data center with a Tier I data center, implementing a Tier III data center can help us gain a net benefit of $13,229,056 over 3-year period.

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| --- | --- | --- |
| Table A | | |
|  | Tier I | Tier III |
| Availability (%) | 99.67% | 99.98% |
| Unavailability (minutes) | 1734.48 | 105.12 |
| Average loss per Minutes | $14,800 | $14,800 |
| Total loss | $25,670,304 | $1,555,776 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Table B | | | | |
|  | Year 1 | Year 2 | Year 3 | Total |
| Cost of implement | ($35,000,000) | 0 | 0 | ($35,000,000) |
| Benefit | 0 | $24,114,528 | $24,114,528 | $48,229,056 |
| 3 Year Net Benefit |  |  |  | $13,229,056 |

References

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