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MIS2501

Professor Doyle

Flash Research Assignment: Data Centers and Networking

Our company can save over $24 million by upgrading our Tier I data center to Tier III data center. Last year, we experienced ten outages to our ERP system, which cost us more than $25 million. By upgrading our data center, we will increase availability by.31%, which will result in decrease of downtime.

Tier III data center has an availability of 99.98% with no more than 1.6 hours of downtime a year, while Tier I data center has 99.67% with 28.8 hours of downtime. Our data center has no redundancy, which means every time we perform maintenance or repairs, our whole systems gets shut down and people can’t work. In terms of redundancy, Tier III offers N+1 Availability. It has multiple independent distribution paths and will have uninterruptible power supply system to act as a backup power generator in cases of emergency. If any component fail, this backup will fill in the gap to keep our data center running. This will allow us to manage maintenance periods without affecting our company’s everyday business tasks and will decrease the amount of downtime.

The installation of the Tier III data center will take no more than one year and will cost us $35 million. But it will save us more than $48 million in downtime costs over the course of three years. By upgrading our data center, we will have only downtime of 105 minutes per year as opposed to our last year’s downtime of 1734 minutes. The increased availability by .31% and decreased amount of downtime will result in $13.2 million in a net benefit over the course of three-year period.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Availability | Minutes/Year | Downtime | Cost |
| Tier 1 | 99.67% | 525,600 | 1,7334.48 min | $25,670,304 |
| Tier 3 | 99.98% | 525,600 | 105.12 min | $1,555,776 |
|  |  |  | Savings | **24,114,528** |

Cost and Benefits

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Year 1 | Year 2 | Year 3 | Total |
| Cost | 35,000,000 | $0 | $0 | 35,000,000 |
| Benefits | $0 | 24,114,528 | 24,114,528 | 48,229,056 |
|  |  |  | 3-year net benefits | **13,229,056** |

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