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Flash Assignment: #1 Data Center and Networking

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By upgrading our current ERP system to an improved Tier III data center, we can potentially save the net benefit of over $13 million during the three-year period. Unplanned data center outages have resulted in staggering losses for our company. The cost of downtime continues to grow. Tier III data center will significantly reduce such outages. In order to reduce downtime cost and improve company’s operational efficiency, we must take this investment.

Our current Tier I system has a singular distribution path and only fulfills short-term requirements of the system. Last year, our ERP system shut down ten times under this Tier I data center. The Tier III data center will help us out from this terrible situation. Basically, the Tier III data center is a concurrently maintainable data center that has redundant capacity components and multiple independent distribution paths, which make it more reliable than a Tier I data center. The availability could be improved from 99.67% to 99.98% (which will significantly increase by 0.31%). In this case, the downtime minutes will be reduced dramatically. At any given time, only one distribution path is required to serve the system. It means that unscheduled shutdowns would no longer occur. We can repair or remove each component of the system at any time without shutting the whole system down.

Last year, we have lost over $25 million for 10 outages. Upgrading to a Tier III data center will cost about $35 million, which seems like a lot. However, we can save more than $24 millions on a yearly basis if implementing a Tier III data center. We estimate the net benefit to be $13 million by the end of year three. In order to support our long-term growth strategy, we should utilize the best practice for data center infrastructure to minimize the cost of downtime and maximize availability.

**Table 1: Cost of Downtime**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Minutes Per Year | Avaliability | Downtime (Min / Year) | Downtime (Total Cost) |
| Tier 1 | 525600 | 99.67% | 1734.48 | $25,670,304.00 |
| Tier 3 | 525600 | 99.98% | 105.12 | $1,555,776.00 |
| Yearly Saving $24,114,528.00 | | | | |

**Table 2: Benefit after upgrading**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Year 1 | Year 2 | Year 3 | Total |
| Cost | $35,000,000.00 | $0 | $0 | $35,000,000.00 |
| Benefit | $0 | $24,114,528.00 | $24,114,528.00 | $48,229,056.00 |
| Net Benefit $13,229,056.00 | | | | |

**References**

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