**“Tier III” Data Center**

 By changing to Tier III will stop the issue of unexpected outages. The issue of unexpected outages has been a problematic occurrence with the ERP system 10 times already over the past year in our organization. These serious issues will continue if we do not make the necessary upgrades to Tier III data center. The difference between Tier I and Tier III, and best fit for our company would be Tier III, because the efficiency of having 99.98% uptime and multiple distribution path can increase work availability and it saves downtime costs $24,114,528 annually.

The difference in running Tier I and Tier III data centers is that Tier I has 99.67% uptime while Tier III has 99.98% uptime, resulting in 27.2 hours of less downtime than Tier I. By running a Tier I data center with only single distribution path and has one back-up generator. “An “N” system is not redundant at all, and the failure of any component will cause an outage, effectively describing a tier 1 type facility. N+1 and 2N, represent increasing levels of component redundancies and power paths” (Neudorfer). Tier III has multiple independent distribution paths with one back-up generator. This helps to protect the system from outages and increase work availability.

        Running a Tier I data center costs $14,800 per minute of downtime. By comparing Tier I and Tier III, the cost of downtime for Tier I would be $25,670,304 per year. Building a Tier III data center has far less of an impact on the financial problems compared to the Tier I system. The cost of downtime can save up to $24,114,528. By looking at a three year period, the cost of building Tier III is $35,000,000 and will take one year to complete. The benefits over the remaining 2 years would be $48,229,056. By switching Tier I to Tier III data center, the company will incur a ROI of 38% and three year net benefits of $13,229,056.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  Minutes in a year | Availability  | Downtime (Min/Year) | Downtime Cost |
| Tier I | 525,600 | 99.67% | 1734.48 | $25,670,304 |
| Tier III | 525,600 | 99.98% | 105.12 | $1,555,776 |
|  |  |  | Saving | $24,114,528 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Year 1 | Year 2 | Year 3 | Total |
| Cost | $35,000,000 | $0 | $0 | $35,000,000 |
| Benefit | $0 | $24,114,528 | $24,114,528 | $48,229,056 |
| 3 Yr Net Befits |  |  |  | $13,229,056 |

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