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The Case for a Tier III Data Center

Our company should upgrade to a Tier III data center to drastically reduce the amount of downtime our systems face. A Tier III data center consists of redundant equipment, which protect our business in the case of an outage. The 3-year net benefit of this project would be $24.1 million dollars.

A Tier III Data Center creates redundancy in our data center equipment to allow for planned maintenance shutdowns. Our only presumed downtime will be from outages caused by emergency situations, for example, a complete power shutdown. With our current Tier I system, maintenance cannot be performed without a complete shutdown, costing our business 30 hours of downtime. Incorporating these redundancies will reduce overall downtime dramatically, allowing us to be a more reliable company and saving us money.

With an implementation cost of $35,000,000 over the span of a year, we can expect to see a return on this investment by Year 3. The attached chart shows total costs of the current system over the next three years, which equal over $77 million dollars. A Tier III System reduces costs by $13.2 million dollars by the third year, with savings only growing in the future.

Explanation of calculations:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Data Center Type | % Downtime | Minutes per Year | Minutes of Downtime | Cost of Downtime per Minute | Total Cost of Downtime per year |
| Tier I | .33% | 525,600 minutes | 1,734.48 | $14,800 | $25,670,304 |
| Tier III | .018% | 525,600 minutes | 105.12 | $14,800 | $1,555,776 |
|  |  |  |  | Cost Difference: | $24,114,528 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Cost for Year 1 | Cost for Year 2 | Cost for Year 3 | Total Cost after 3 Years (Breakeven Year) |
| Tier I | $25,670,304 | $25,670,304 | $25,670,304 | $77,010,912 |
| Tier III | Upgrade: $35,000,000  Tier I Cost: $25,670,304 | $1,555,776 | $1,555,776 | $63,781,856 |

Yearly cost structure through breakeven year:

Works Cited

Carrol, Alex. “N+N Data Center Redundancy: How Two of Everything Means Less Data Center Downtime.” Lifeline Data Centers, 12 June 2017, https://lifelinedatacenters.com/data-center/nn-data-center-redundancy-how-two-of-everything-means-less-data-center-downtime/.

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