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We have an opportunity to save $13,218,400 over the next three years by investing in a Tier III data center. The Tier I data center currently in place is largely inefficient, garnering 30 hours of downtime a year. During these hours of downtime the company cannot process orders, make products, or ship products. Investing in a Tier III data center will cut down on the number of outages due to an inadequate data center and significantly lower expenses.

Data center tier classifications are representative of a data center’s projected performance. A data center that is tier III will prove to be more reliable and effective, due to redundant components and distribution paths which limit the severity and threat of downtime. Specifically, “a Tier III data center is concurrently maintainable, allowing for any planned maintenance activity of power and cooling systems to take place without disrupting the operation of computer hardware located in the data center”(“Tier Standards Overview”). It will be able to operate even if “each and every capacity component and element in the distribution paths are removed” ("Data Center Site Infrastructure Tier Standard: Topology"). The result is downtime of only 1.75 hours a year. In contrast to this, a Tier I data center has basic signal paths that are not redundant, resulting in 28.25 more hours of downtime per year.

Investing $35,000,000 in a Tier III data center will yield a 37.8% ROI in a three year period. The average cost of downtime per minute is $14,800. At this rate, the Tier I data center currently in place costs the company $25,663,200 a year. On the contrary, a Tier III data center will cost the company $1,554,000 a year, saving the company $24,109,200 annually. This equates to a net gain of $13,218,400 over the next three years.

Tier I Data Center

|  |  |  |  |
| --- | --- | --- | --- |
| **Unavailability**  | **Minutes Per Year** | **Downtime Per Year (Unavailability x Minutes Per Year)** | **Cost of Downtime Per Year****(Downtime Per Year x $14,800)** |
| .33% | 525,600 | 1,734 | $25,663,200 |

Tier III Data Center

|  |  |  |  |
| --- | --- | --- | --- |
| **Unavailability** | **Minutes Per Year** | **Downtime Per Year (Unavailability x Minutes Per Year)** | **Cost of Downtime Per Year****(Downtime Per Year x $14,800)** |
| .02% | 525,600 | 105 | $1,554,000 |

ROI

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Data Center** | **Year 1** | **Year 2** | **Year 3** | **Total** |
| Tier I | $0 | $25,663,200 | $25,663,200 | $51,326,400 |
| Tier III | $35,000,000 | $1,554,000 | $1,554,000 | $38,108,000 |
| Difference | -$35,000,000 | $24,109,200 | $24,109,200 | $13,218,400 |
| ROI |  |  |  | 37.8% |

Works Cited

"Data Center Site Infrastructure Tier Standard: Topology." (2009-2012): 1-7. Uptime Institute. Web. 8 Sept. 2014. <http://community.mis.temple.edu/mis2501sec001f14/files/2014/08/Data-Center-Site-Infrastructure-Tier-Standar-Topology.pdf>.

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