YU ZHOU

915236324

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Data Centers and Networking

 Our company can realize a net benefit of $13 million in three years by investing in a Tier III data center. The Tier III data center has a 99.98% availability with only 1.6 hours downtime per year. Upgrading the current Tier I data to center to a Tier III data center will reduce the downtime cost and improve the data center’s availability.

 A Tier III data center provides redundant capacity components and multiple active power and cooling distribution paths serving the whole system. In the Tier III data center, there is no need to shut down the entire system when one distribution path does not work as another distribution path will take over without interruption. The multiple distribution paths allow the system to run continuously during planned and unplanned outages. The Tier III data center also has 72 hours power outage protection while our current data center does not provide any. Switching to Tier III data center will increase the company’s efficiency and reduce downtime by concurrently maintaining operations and having power outage protection to keep the daily operations flowing.

 The Tier III data center will cost $35 million to build. However, it will reduce the outage cost from $25 million previously to 1.5 million and will achieve a total benefit of $48 million in a three-year period. By updating to a Tier III data center, our company can generate a net benefit of $13 million by the end of year three.

Work cited

"Data Center Site Infrastructure Tier Standard: Topology." *Uptime Institute, LLC*. 2010. Web. 6 Sept. 2015.

“The standards overview” Colocation America, Web 6. Sept .2015 < [*http://www.colocationamerica.com/data-center/tier-standards-overview.htm*](http://www.colocationamerica.com/data-center/tier-standards-overview.htm)>

"Explain: Tier 1 / Tier 2 / Tier 3 / Tier 4 Data Center." Cyber Citi. NIXCRAFT, 7 June 2008. Web. 05 Sept. 2013.

Figure 1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | Minutes in a year | Availability | Downtime a year/minutes | Downtime cost |
| Tier I | 525600 | 99.67% | 1734.48 | 25,670,304.00 |
| Tier III | 525600 | 99.98% | 105.12 | $1,555,776.00  |
| savings |   |   |   | $24,114,528.00  |

Figure 2

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | Year 1 | Year2 | Year 3 | Total |
| 3 years cost | $35,000,000  | $0  | $0  | $35,000,000  |
| 3 years savings | $0  | $24,114,528  | $24,114,528  | $48,229,056  |
| 3 years net benefits |   |   |   | $13,229,056  |