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Enterprise IT Architecture

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Flash Research Paper 1: Data Center/ Networking

The company’s inadequate technology is stealing millions. For each minute our systems fail, we lose $14,800, adding up to nearly $26 million per year. Our Tier I data center does not adequately protect the company from system failures. By improving our data center to a stronger Tier III structure, we can ensure that our data center is less susceptible to failures and reduce a significant amount of downtime. This investment will reduce downtime costs to under $2 million per year.

The Tier I structure does not have redundant capacity components while the Tier III does. A Tier I structure meets the minimum data center requirements but is not always reliable (IBM Systems Magazine). Depending on only one component will lead to more system interruptions if that component fails or if an unexpected event occurs (Uptime Institute). The redundant components in the Tier III structure ensure that if one experiences an interruption, the functionality can be transferred to another component. Even though the data center only requires one distribution path to run, the Tier III structure has multiple distribution paths that serve as backup routes (Tech Target). These alternative routes ensure that the system will not experience downtime in the event of a power failure. The Tier III data center structure will make the company’s systems more reliable and less susceptible to failures.

The Tier I structure currently costs the company nearly $26 million in downtime costs per year due to 1734.48 minutes of downtime. Investing in a Tier III structure will drastically reduce downtime to 105.12 minutes and reduce costs to under $2 million. The initial cost of the investment is $35 million. After deducting the initial cost, the improved data center will save over $13 million in a three year period and will continue to save the company money in the future. Investing in this technology will enable the company to conduct more business by eliminating unnecessary system downtime.

Tier I- 1-.9967= .0033 x 525,600 minutes in a year = 1734.48 minutes of downtime

1734.48 x $14,800 downtime costs per minute= $25,670,304 downtime costs per year.

Tier III 1-.9998= .0002 x 525,600 minutes in a year = 105.12 minutes of downtime

105.12 x $14,800 downtime costs per minute= $1,555,776 downtime costs per year.

Net difference= $25,670,304- $1,555,776= $24,114,528

Three Year Benefit

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Year 1 | Year 2 | Year 3 | Cumulative Total |
| Total Cost | $35,000,000 | - | - | $35,000,000 |
| Total Benefits | - | $24,114,528 | $24,114,528 | 48,229,056 |
| Net Benefits |  |  |  | 13,229,056 |
|  |  |  |  |  |

Works Cited

Baqi, S. (2015, September). Determining the Operations of Redundant Capacity Components for a Data Center Facility. Retrieved February 15, 2017, from http://www.ibmsystemsmag.com/ibmi/administrator/backuprecovery/redundant-capacity/

Rouse, M. (2008, May). What is Uptime data center tier standards? - Definition from WhatIs.com. Retrieved February 15, 2017, from <http://searchdatacenter.techtarget.com/definition/Uptime-data-center-tier-standards>

Stansberry, M. (2014, September 30). Explaining the Uptime Institute's Tier Classification System. Retrieved February 15, 2017, from <https://journal.uptimeinstitute.com/explaining-uptime-institutes-tier-classification-system/>