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Flash Research Assignment #1: Data Centers and Networking

CTA has the opportunity to save over $13 million over the next three years if they upgrade from a tier I to a tier III data center. These savings are due to the fact that tier III systems are redundant and concurrently maintainable.

There are many benefits of upgrading to a tier III data center. The first benefit is that tier III centers have N+1 redundant systems (Rishka, 2015). This means that in case of a system failure we have a backup for that particular system. Another benefit of a tier III data center is the ability to have one active and alternate path for power and cooling. This ensures that our data center will always have power and the ability to cool vital components (Hertvik, 2017). Tier I data centers have only one path, which can lead to catastrophic failure and downtime due to overheating. The last benefit of a tier III data center is that it is concurrently maintainable. Unlike tier I data centers, tier III data centers will be able to perform maintenance without shutting down.

By upgrading to a tier III data center, CTA will save $48 million over the next three years. After an initial investment of $35 million to upgrade to the tier III data center, we will benefit from $24 million per year. Factoring in costs, we will see a net benefit of $13 million over the course of the next three-year period.

Sources:

“Data Center Standards (Tiers I-IV).” Colocation America Corporation, www.colocationamerica.com/data-center/tier-standards-overview.htm.

Gupta, Rishika. “Why to Prefer a Tier 3 Data Center?” RackBank, 5 Jan. 2015,

www.rackbank.com/blog/why-to-prefer-tier-3-data-center/.

Hertvik, Joe. “Data Center Tiers: What Are They and Why Are They Important? via @BMCSoftware.” BMC Blog RSS, BMC, 28 Feb. 2017, www.bmc.com/blogs/data- center-tiers-important/.

Diagrams:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Minutes | 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 | $1,555,766 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tier III Costs vs Benefits** | Year 1 | Year 2 | Year 3 | Total |
| Costs | $35,000,000 | $0 | $0 | $35,000,000 |
| Benefits | $0 | $24,111,538 | $24,111,538 | $48,229.076 |

**Net Benefit: $13 million**