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MIS 2501: Enterprise IT Architecture

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Flash Research Paper #1 REVISED

Data Centers and Networking

We should switch from Tier I data centers to Tier III data centers because we can realize a net benefit of $13.2 million.  Tier III data centers have redundant components that allow maintenance or equipment replacement to occur without shutting down.  Switching from Tier I data centers to Tier III data centers will reduce our downtime from 1,735 minutes to 105 minutes.

Tier III data centers have redundant delivery paths for power so that maintenance/updates can be done without being shut down and provides at least 72-hour power outage protection.  The equipment itself is served by only one delivery path, but if it fails, another one is ready.  Switching to Tier III data centers will allow us to have uptimes of 99.98%, compared to our current uptime of 99.67% with Tier I data centers.

The cost of implementing Tier III data centers and maintaining them over a three-year period is $61.80 million.  Switching from Tier I data centers to Tier III centers will save us $24.10 million in downtime costs per year.  The net benefit of switching from Tier I to Tier III is $13.2 million over a three-year period.

Calculations

|  |  |  |  |
| --- | --- | --- | --- |
|  | Availability | Downtime (minutes/year) | Downtime Cost (per  year) |
| Tier I | 99.67% | 1,734.48 | $25,670,304 |
| Tier III | 99.98% | 105.12 | $1,555,776 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Year 1 Costs | Year 2 Costs | Year 3 costs | Total Costs |
| Tier 1 | $25,670,304 | $25,670,304 | $25,670,304 | $77,010,912 |
| Tier III | $58,670,304 | $1,555,776 | $1,555,776 | $63,781,856 |

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