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Flash Research Paper #1- Data Centers & Networking

Over the next three years our company can realize a net benefit of $13,229,056 by upgrading our current datacenter from a Tier I to a Tier III datacenter. Last year we encountered ten outages in our ERP system due to the unreliability of our current Tier I system. With a loss of $14,800 per minute that comes out to about $25,670,304 a year in lost capital. By upgrading to a Tier III datacenter, we are investing in redundant components which will help create reliability in our data centers and help save money by reducing the cost of downtime.

Our current Tier I datacenter features “non-redundant capacity components and a single, non-redundant distribution path” (Renaud, 2012). This means that Tier I datacenters are more susceptible to costly downtime because without multiple distribution paths or redundant parts the datacenter can crash if just one piece of hardware crashes. The important factors of a Tier III datacenter are that they offer redundant parts creating alternative distribution paths, are concurrently maintainable, and offer an improved availability. Since a datacenter only requires a singular pathway to run, the addition of multiple pathways is important because it allows for the datacenter to continually operate if there were to be an issue with any of the systems hardware. In a Tier I system if we wanted to perform maintenance it would require our system to experience downtime, however, by having concurrent parts we can have these other pieces of hardware take over as we perform maintenance and keep the datacenter running. These features allow for us to reduce downtime greatly all the while reducing costs and increasing savings.

When we consider the price of installation and total downtime we will incur a total cost of $39,667,328 over three years. However, we will receive a benefit $48,229,056 after installing the upgraded Tier III data center since it will greatly reduce the amount of downtime in our datacenters. This will result in a net benefit of $13,229,056 over a three-year span.

Work Cited

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| Tier I vs Tier III (Cost per Year)  |
|  | Minutes Per Year | System Availability  | Minutes of Down Time  | Total Cost of Downtime |
| Tier I | 525,600 | 99.67% | 1734.48 | (1734.48\* $14,800) =$25,670,304 |
| Tier III | 525,600 | 99.98% | 105.12 | (105.12 \* $14,800) = $1,555,776 |
|  |  |  | Total Savings  | $24,114,528 |

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| Total Cost Analysis of Implementing a Tier III Data Center (Three Years)  |
|  | Year 1 | Year 2 | Year 3 | Totals |
| Savings vs Tier I | $0  | $24,114,528 | $24,114,528 | $48,229,056 |
| Costs | $35,000,000 | $0 | $0 | $35,000,000 |
|  |  |  | Three Year Benefit | $13,229,056 |