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Flash Research Paper 1

 With our current Tier I datacenter, we are losing over $25 million from downtime every year. With a Tier III datacenter, we could reduce that cost to less than $1.6 million per year and turn out over $13 million in net benefits over the next three years. This change would make annual downtime only slightly longer than an hour rather than over a day with our current datacenter.

 A Tier III datacenter is resistant to downtime because shutdown is not required for equipment replacement and maintenance. Redundant components, duplicates in case one fails, allow for another component to take over when the other one is being serviced. Additionally, there are redundant uninterrupted power supplies and cooling units for the same purpose; there is usually another available component when one is being serviced. The system is not required to stop in order for it to be maintained, which saves money and customers yearly. Tier III datacenters are only down for .02% of the year (which equates to 1.75 Zhours of downtime), while our current Tier I datacenter has only .33% downtime during the year (which equates to 28.91 hours of downtime). Though the percentage difference seems small, it makes a substantial yearly cost difference of over $24 million at $14,800 per minute of downtime.

 By building a Tier III datacenter, our costs over the next three years total $35,000,000, due to construction. Our benefits over the next three years total $48,229,056, which come from savings of lessened downtime. The net benefits over three years totals $13,229,056. We save slightly more than 27 hours in downtime per year.

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