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## Flash Research Assignment – Data Centers and Networking

Last year our company spent \$25 million in downtime costs and by enhancing our systems from a Tier 1 to a Tier 3 we will save \$13 million throughout the span of three years. Using our current Tier 1 data center causes over 24 hours of downtime throughout the year while the Tier 3 only has one hour of downtime a year. For these reasons, we should implement a Tier 3 system.

A Tier 1 system only has one source of power and one distribution path. This means it must be shut down every time a maintenance or repair is scheduled. Also, if there is an operation error made by an employee it can cause a disturbance in the data center. The Tier 1 availability has 99.67% while the Tier 3 has 99.98% availability. Being able to perform maintenance and repairs without shutting the system down requires a Tier 3 data center. Additionally, Tier 3 has redundant capacity components and independent distribution paths. This means every single element in the system can be repaired without shutting the whole system down.

Installing a Tier 3 system will take one year and cost approximately \$35 million to install. Throughout the following three years it will give us a net benefit of \$13 million dollars. Purchasing the Tier 3 will prevent our company from the risk of our systems being out and not being able to produce revenue while shut down. Having the Tier 3 data system will give us a competitive advantage by letting us still process orders and produce a revenue while our systems are being worked on. With the extra money we will save in purchasing a Tier 3 we can invest it in other sections of the company.

## Downtime Costs

	Minutes per year	Availability	Downtime (min per year)	Total Downtime Costs
Tier 1	525,600	99.67%	1,734.48	\$25,670,304
Tier 3	525,600	99.98%	105.12	\$1,555,776
<b>Total Savings</b>				<b>\$24,114,528</b>

## A Look at the Next Three Years- Spending & Gaining

	Year 1	Year 2	Year 3	Total
Spending	\$35,000,000	\$0	\$0	\$35,000,000
Gaining	\$0	\$24,114,528	\$24,114,528	\$48,229,056
<b>Net Benefit</b>				<b>\$13,229,056</b>

## References:

Tang, Helen. "Three Signs It's Time to Transform Your Data Center." Industry Perspectives, 3 August 2010.

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Turner VI, Pitt W., Seader, John H., Renaud, Vincent E. "Data Center Site Infrastructure Tier Standard: Topology." UptimeInstitute, LLC, 2010.

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