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### Data Centers and Networking

Over the past year, our company has experienced 10 unexpected outages and over-\$24-million loss due to insufficient facilities in our current data center. By upgrading our data center from Tier I to Tier III, our company can decrease downtime loss and increase net profit by \$13,229,056 over the next three years. Tier III data center is a more sophisticated infrastructure with multiple power sources, which allows redundancy and offers up to 99.98% availability.

The key capability of Tier III data center is having higher redundancy, which leads to higher availability of 99.98%, compared to Tier I, which is 99.67%. By offering multiple power resources to all IT equipment in the infrastructure, it decreases the downtime significantly by 93.94% per year; hence, using a Tier III data center prevents us from stopping daily company's operating activities. If we have an outage, there is always one back up power source in the system.

We can realize a benefit of \$48,229,056 by reducing the downtime and avoiding the associated costs over three-year period. The cost of implementing a Tier III datacenter is \$35 million and this cost occurs once in the first year. By upgrading to Tier III datacenter, our company will have a net profit of \$13,229,056 over three years.

Reference

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12 Jan. 2017, <http://www.bmc.com/blogs/data-center-tiers-important/>.

Appendix

	Minutes in a year	Availability	Downtime (min/year)	Downtime Cost
Tier I	525,600	99.67%	1,734.48	\$25,670,304
Tier III	525,600	99.98%	105.12	\$1,555,776
			<b>Savings</b>	<b>\$24,114,528</b>

	Year 1	Year 2	Year 3	Total
<b>Costs</b>	\$35,000,000	\$0	\$0	\$35,000,000
<b>Benefits</b>	0	\$24,114,528	\$24,114,528	\$48,229,056
<b>3-Year Net Benefits</b>				\$13,229,056