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MIS 2501

Flash Research Assignment: Data Centers and Networking

You are the CTA of a small but rapidly growing manufacturing company. Over the past year your

organization has experienced 10 outages to its ERP system. The vast majority of these outages have

been caused as a result of inadequate facilities in your existing, primitive data center. When this

system is down your organization cannot process orders, cannot make product, and cannot ship

product! Outages cause serious operational problems and impact both the top and bottom line of the

income statement.

Prepare a paper for the CIO in which you propose building a "Tier III" data center. Describe the key

capabilities of a tier III data center and describe the business case for making this investment. Crude

estimates indicate that building this data center will take 1 year and cost approximately

$35,000,000. Assume that you are currently running a "Tier I" data center with 99.67% availability.

You are proposing building a "Tier III" data center with 99.98% availability. Assume that downtime

costs your organization $14,800 per minute. Assume that the organization looks at all investments

in technology over a period of three years.

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Data Centers & Networking

Upgrading our company's data center from a Tier I to a Tier III will save more than $21,000,000 in downtime costs. A Tier III data center has redundant components which increase our availability up to 99.98% from 99.66%. The cost of our downtime is at $14,800 a minute and with a Tier I data center we could reach up to 28 hours of downtime costs, compared to 2 hours with a Tier III data center. With the upgrade to the Tier III datacenter, we would have a three-year net benefit of $13,229,056.

The past year our company has experienced 10 system outages caused by our insufficient data center facilities. A Tier I data center must be shut down for maintenance work, but a Tier III does not have to be shut down because it has redundancy. A Tier III data center has N+1 redundancy meaning the number of power sources plus one. In the case of outages, it has a backup power source by generators where a Tier I has no redundancy.

The Tier III data center will take us one year to build and cost $35,000,000. If we continue to use the Tier I over the next three years, there would be nearly 84 hours of downtime at $14,800 a minute with total costs over $74,000,000. Having a Tier III data center would reduce the cost down to $8,524,800 and provide at a three-year net benefit of $13,229,056. Upgrading to a Tier III data center would save millions and improve efficiency.

Costs				
	Minutes Per Year	**Availability**	**Downtime(Minutes/Year)**	**Cost**
Tier I	525,600	99.67%	1,734.48	$ 25,670,304.00
Tier III	525600	99.98%	105.12	$ 1,555,776.00
			Total Savings:	$ 24,114,528.00

Benefits				
	Year 1	**Year 2**	**Year 3**	**Total**
Costs	$ 35,000,000.00	$ -	$ -	$ 35,000,000.00
Benefits	$ -	$ 24,114,528.00	$ 24,114,528.00	$ 48,229,056.00
			3 Year Net Benefit:	$ 13,229,056.00

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