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 unscheduled 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.

The maximum length of the body of this paper is 1 page. Additional pages may be used for optional diagrams and required references.

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Implementing a Tier III data center could save our company about $24 million of downtime cost per year and $13 million in net benefits. Tier III will allow us to perform maintenance on a system without shutting down any other components. It allows us to keep running our computer systems and reduces the amount of downtime. Therefore, a Tier III data center should be implemented in our organization to save us money and improve production.

A Tier III is much more advanced data center than a Tier I. First, a Tier I contains a non-redundant capacity components and a single distribution path used for cooling and power (Benson). A Tier III data center has multiple distribution paths for power and contains redundant capacity, which is a huge benefit because if a system fails, we will have a backup (Benson). The number of downtime hours per year for a Tier III data center is much less than a Tier I. A Tier I results in 1,728 minutes of downtime per year while Tier III results in only 96 minutes per year (Giaquinta). One of the biggest advantages of implementing a Tier III data center is that it allows maintenance to take place without affecting the entire IT environment. (Uptime Institute). Therefore, it will benefit our company to build a Tier III and increase production levels.

In just a year, we experienced 10 outages and since downtime costs our company $14,800 per minute we cannot risk another outage. A Tier I data center has 1,728 minutes of downtime per year and a downtime cost of $14,800 per minute resulting in about $25.8 million in downtime costs per year. Tier III has 96 minutes of downtime per year and downtime costs of $14,800 per minute resulting in about $1.4 million in downtime costs per year. Therefore, our company has the opportunity to save up to $24 million in downtime costs a year. Implementing a Tier III data center will cost us $35 million and will take 1 year to build. Since we can save $24 million a year, our total benefits over a 3 year period is about $48 million. Considering the cost of implementing the data center, we will have a net benefit of $13 million and a ROI of 38%.

Works Cited

Benson, Terri. “TIA-942 Data Centers Standards Review.” *ADC Telecommunications*. 2006. Web. September 6, 2014.

“Data Center Site Infrastructure Tier Standard: Topology.” *Uptime Institute Professional Services, LLC*. Web. Septemeber 6, 2014.

Giaquinta, John. “Data Center Tier Levels.” *Data Center and Colocation*. Web. September, 6,2014.

Downtime Cost Savings

	Downtime cost/min	Downtime/Hour	Downtime/Min	Downtime cost/Year
Tier I	$14,800	28.8	1,728	$25,574,400.00
Tier III	$14,800	1.60	96	$1,420,800.00
			Total Savings	**$24,153,600.00**

Tier III Implementation Benefits

Year	1	2	3	Total
Benefit	$0.00	$24,153,600.00	$24,153,600.00	$48,307,200.00
Cost	$35,000,000	$0	$0	$35,000,000
			Net Benefits	$13,307,200.00