Prompt #1:

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 ("Data Center Tiers").

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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Our company will have net savings of over $13M over three years if we update our data center from Tier I to Tier III. These savings can be credited to the .31% increase in availability from Tier I to Tier III data centers, a direct result of the concurrent maintenance and distribution paths offered in Tier III. With ten unscheduled outages to our ERP system last year alone, we need to focus on reducing downtime for our organization.

The availability increase from Tier I to Tier III data centers is credited to concurrent maintenance, single distribution path, and alternative components that serve as backup for the Tier III data center. Concurrent maintenance decreases downtime because it maintains the system on a regular, scheduled basis without having to shut down any components ("Data Center Tiers"). Additionally, Tier III data centers can have every capacity component and element in the distribution path removed without impacting the computer equipment, meaning it can still function when parts are removed for any reason. Also, Tier III data centers are better prepared for downtime because they always have one alternative component in the event of a system failure ("Data Center Site").

The project will save us $48M over three years, with $35M in costs and one year of implementation. As calculated in Figures 1 and 2, over the three years the net benefit of the investment will be $13M with a 38% ROI for the company. Clearly, switching to a Tier III data center will be beneficial for our company and will help us mitigate downtime costs.

Works Cited

Data Center Site Infrastructure Tier Standard: Topology. Rep. Uptime Institute, 2009. Web. 5 Sept. 2013.

"Data Center Tiers." Webopedia. N.p., n.d. Web. 05 Sept. 2013.

"Explain: Tier 1 / Tier 2 / Tier 3 / Tier 4 Data Center." Cyber Citi. NIXCRAFT, 7 June 2008. Web. 05 Sept. 2013.

Figure 1

	Minutes/year	Availability	Downtime (min/year)	Downtime cost
Tier I	525,600	99.67%	1734.48	$25,670,304.00
Tier III	525,600	99.98%	105.12	$1,555,776.00
			Savings	**$24,114,528.00**

Figure 2

	Year 1	Year 2	Year 3	Total
Costs	$35,000,000	$0	$0	$35,000,000
Benefits	$0	$24,114,528.00	$24,114,528.00	$48,229,056
			3 Year Net Benefits	$13,229,056
			3 Year ROI	37.80%