

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.

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

Data Centers and Networking

Our company could experience a net benefit of \$13.2 million over the next three years by implementing a Tier III data center. Our ERP system cannot be adequately supported by the current Tier I data center, which has led to numerous outages and significant costs. A Tier III data center relies on redundant components to supply power through interruptions, which can largely reduce overall downtime for our company.

Currently, the Tier I data center has no redundant components and only one distribution path. This leaves the system susceptible to disruptions, meaning more time lost and maintenance required. A Tier III data center is a cost-effective solution that uses redundant capacity components and multiple distribution paths to maintain continuous power. These components would provide backup power through outages and ensure a continuous work environment, even if repairs are necessary. By upgrading to Tier III, the data center's availability would increase from 99.67% to 99.98% and have no greater than 1.75 hours of downtime per year. As a result, our company would have less outages and see a 94% decrease in downtime per year, dropping from 1,734 to only 105 minutes.

A Tier III data center would take one year to build, at a cost of \$35 million. As a result of its implementation, the total cost of downtime per year would be reduced from \$25.6 million to \$1.5 million. Our company would experience a benefit of \$48.2 million over a three year period, leading to a net benefit of \$13.2 million.

Works Cited

“Data Centre Tiering.” *Coreix*. Coreix Limited, n.d. Web. 6 February 2018.

“Understanding Tier 3 and Tier 4.” *OVH*. OVH, n.d. Web. 6 February 2018.

Data Center Site Infrastructure Tier Standard: Topology. Uptime Institute, LLC, 2012.

	Tier I Data Center	Tier III Data Center
% Availability	99.67%	99.98%
% Downtime	0.33%	0.02%
Minutes per year	525,600	525,600
Minutes of downtime per year	1,734.48	105.12
Cost per minute	\$14,800	\$14,800
Total cost of downtime per year	\$25,670,304	\$1,555,776

Savings on downtime per year: \$24,114,528

Investment	Costs	Savings
Year 1	\$35,000,000	-
Year 2	-	\$24,114,528
Year 3	-	\$24,114,528
Total Costs	\$35,000,000	
Total Savings	\$48,229,056	

Net benefit for our company: \$13,229,056