

### FLASH RESEARCH: DATA CENTERS

Building a Tier 3 data center will incur a total savings of \$48 million over a three-year period. Due to the low capabilities of our current database there have been ten outages, which causes a halt in all business functions, also known as downtime. This downtime has costs us \$25.6 million. A Tier III data center will be more efficient because of the key traits and capabilities of redundant components and multiple distribution paths.

A Tier III data center's capabilities include redundant capacity components and multiple independent distribution paths. This means if one part or component in the datacenter needs repair, it will not cause any disruption to the operation of the datacenter, eliminating downtime. In addition, routine maintenance can be made throughout the data center without any loss of business functions. Currently the Tier 1 has availability of 99.67%, meaning that the datacenter is unavailable 28 hours a year, compared to the Tier III availability of 99.98% only down 1.5 hours. The increased availability will yield an annual savings of over \$24 million. In addition to the redundant components, a Tier 3 data center will be dual powered by independent sources, and store 12 hours of fuel resources as backup. This protects the company from any downtime caused by major power failures. In order to build such a powerful data center it will cost \$35 million to build and will take a year to complete.

Upon completion of the Tier III data center the total cost is \$35 million, but with the decrease in downtime the total savings is \$48 million. Over a three-year period with a Tier III data center there is a net benefit of \$13 million. The implementation of a Tier 3 yields a 38% return on investment.

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Resources:

*Data Center Site Infrastructure Tier Standard: Topology.* (2009). New York: The Uptime Institute Publications.

Study: Data Center Downtime Costs \$7,900 Per Minute. (2013, December 3). Retrieved January 18, 2015, from <http://www.datacenterknowledge.com/archives/2013/12/03/study-cost-data-center-downtime-rising/>

Tier Standards Overview | Data Centers | Colocation America. (n.d.). Retrieved January 22, 2015, from <http://www.colocationamerica.com/data-center/tier-standards-overview.htm>

Calculations:

Cost Comparison

	Tier 1	Tier 3
Availability	99.67%	99.98%
Downtime Cost/minute	\$ 14,800	\$ 14,800
Downtime min/ year	1734.48	105.12
Costs of Downtime/year	\$ 25,670,304	\$ 1,555,776
Savings/year		\$ 24,114,528

3-Year Cost Benefit Analysis

Years	1	2	3
Savings	\$ 24,114,528	\$ 24,114,528	\$ 48,229,056
Costs	\$ 35,000,000	\$ -	\$ 35,000,000
			Net Benefit 3-year \$ 13,229,056

ROI= 38%