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MIS 2501

Data Centers and Networking

By upgrading our data center from Tier 1 to Tier 3, we will gain over $13 million in net profit in 3 years. The new data center has the redundant capacity, dual power, and permanently installed capacity to cope with system outages and system maintenance, without interrupting business operation. By investing 35 million in a Tier 3 data center, we can decrease the system downtime, thereby increasing our business operation efficiency.

The Tier 3 data center has several unique features. First, the Tier 3 data center has the redundant capacity and multiple independent distribution paths, which enables system maintenance without interrupting business operation. Second, all its IT equipment is dual powered, when half of the power cut down, the system can still operate, so it has less chance to suffer an outage. Third, there is sufficient permanently installed capacity to meet the needs of the site when redundant components are removed from service.

The total cost for Tier 3 data center is $38.1 million, including $35 million 1-year construction cost and $3.1 million 3-year outage cost. The avoidable 3-year outage cost from Tie 1 datacenter is $51.34, so the 3-year net benefit would be $13.23 million.

|  |  |  |
| --- | --- | --- |
|  | tier 1 | tier 3 |
| Availability(%) | 99.67% | 99.98% |
| Unavailability(%) | 0.33% | 0.02% |
| Unavailable minute per year | 1734.48 | 105.12 |
| Cost per minute(down time) | 14800 | 14800 |
| Cost per year($) | 25,670,304 | 1,555,776 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | year 1 | year 2 | year 3 | total |
| Cost | (35,000,000.00) | 0 | 0 | (35,000,000.00) |
| Net Gain | 0 | 24,114,528.00 | 24,114,528.00 | 48,229,056.00 |
| total | (35,000,000.00) | 24,114,528.00 | 24,114,528.00 | 13,229,056.00 |

References

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