

FEASIBILITY REPORT

Introduction

The purpose of this report is to determine which of two proposed options would best enable ACM Technology Consulting to upgrade its file servers and its Internet capacity to meet its increasing data and communication requirements.

Background. In October 2004, the Information Development and Technical Support Group at ACM put the MISSION System into operation. Since then, the volume of processing transactions has increased fivefold (from 1,000 to 5,000 updates per day). This increase has severely impaired system response time; in fact, average response time has increased from less than 10 seconds to 120 seconds. Further, our new Web-based client services system has increased exponentially the demand for processing speed and access capacity.

Scope. We have investigated two alternative solutions to provide increased processing capacity: (1) purchase of a second ARC 98 processor to supplement the first, and (2) purchase of an HRS 60/EP with PRS enterprise software and expandable peripherals to replace the current ARC 98. The two alternatives are evaluated here, according to cost and, to a lesser extent, according to expanded capacity for future operations.

Additional ARC 98 Processor

Purchasing a second ARC 98 processor would require additional annual maintenance costs, salary for an additional computer specialist, increased energy costs, and a one-time construction cost for necessary remodeling as well as installing Internet and other connections.

Annual maintenance costs	\$35,000
Annual costs for computer specialist	75,000
Annual increased energy costs	7,500
Total annual operating costs	\$117,500
Construction cost (one-time)	50,000
Total first-year costs	\$167,500

The installation and operation of another ARC 98 processor are expected to produce savings in system reliability and readiness. _____

System Reliability. A second ARC 98 would reduce current downtime periods from four to two per week. Downtime recovery averages 30 minutes and affects 40 users. Assuming that 50 percent of users require system access at a given time, we determined that the following reliability savings would result:

$2 \text{ downtimes} \times 0.5 \text{ hours} \times 40 \text{ users} \times 50\% \times \$50.00/\text{hour overtime} \times 52 \text{ weeks}$
= \$52,000 annual savings

[*The feasibility report would also discuss the second option—purchase of the HRS 60/EP and its long-term savings.*]

Conclusion

A comparison of costs for both systems indicates that the HRS 60/EP would cost \$2,200 more in first-year costs.

	<i>ARC 98</i>	<i>HRS 60/EP</i>
Net additional operating costs	\$56,300	\$84,000
One-time construction costs	<u>50,000</u>	<u>24,500</u>
First-year total	\$106,300	\$108,500

Installation of a second ARC 98 processor would permit the present information-processing systems to operate relatively smoothly and efficiently. It would not, however, provide the expanded processing capacity that the HRS 60/EP processor would for implementing new subsystems required to increase processing speed and Internet access.

Recommendation

The HRS 60/EP processor should be purchased because of the long-term savings and because its additional capacity and flexibility will allow for greater expansion in the future.