



**NUCLEUS
RESEARCH**

RESEARCH NOTE D105

ROI ANALYSIS YOU CAN TRUST™

ROI Case Study: Microsoft Exchange Server MGM MIRAGE

THE BOTTOM LINE

MGM MIRAGE has a high availability architecture for its e-mail system, easier administration and management, and disaster-recovery benefits with Microsoft Exchange Server 2003.

ROI: 125%

Payback: 10 months

THE COMPANY

MGM MIRAGE owns and operates 14 resort casinos worldwide, including the Bellagio, MGM Grand, The Mirage, Treasure Island, and New York-New York on the Las Vegas strip and resort properties in Mississippi, Michigan, and Australia. Headquartered in Las Vegas, Nevada, MGM MIRAGE has over 43,000 employees.

THE CHALLENGE

MGM MIRAGE operates around the clock and had an e-mail system running on Microsoft Exchange Server version 5.5 with 10,000 e-mail accounts. With a user base of that size, MGM MIRAGE faced challenges in providing optimum service to its employees to ensure that e-mail was readily available and quickly restorable if e-mail or entire mailboxes were deleted by accident.

The company classifies its business applications according to criticality, with business-critical applications requiring the capability for disaster recovery and high availability. Because e-mail is business critical, MGM MIRAGE needed a system that would provide:

- A high availability architecture that provided failover disaster-recovery support for its geographically dispersed locations
- Easier administration to improve response time for managing and servicing employee e-mail mailboxes
- Flexibility in server configuration to support multiple databases per server and enable scheduled maintenance to be conducted without interrupting e-mail service for employees

THE STRATEGY

In April 2003, the project team consisting of a Microsoft Exchange administrator and a system engineer responsible for project management, design, and architecture determined how many servers and clusters were needed to support the e-mail system. The project team also consulted with IT staff specialists concerning storage backup, antivirus, and security software that would interact with the Microsoft Exchange Server 2003. The team worked with Microsoft consultants to help facilitate project time lines and answer questions as the test system was designed.

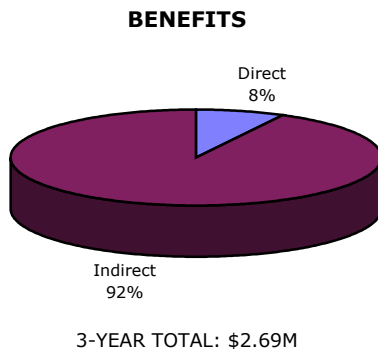
After developing a project plan, they built a test server in the lab and went through the install, test, and migration process to identify and work through issues. MGM MIRAGE was also undergoing an operating systems migration process from Windows NT to Windows Server 2003 with an Active Directory (AD) environment, so the team spent some time learning how to get Exchange to work with AD. Once the test lab was running and all dependent software, such as the antivirus software, was upgraded to work with Exchange Server 2003, MGM MIRAGE tested 200 IT staff on the test e-mail server.

In September 2003, after a successful test with a few bugs identified and fixed, MGM MIRAGE moved the e-mail server out to a production environment involving 1500–2000 users. By November 2003, MGM MIRAGE expects to roll out the Exchange server to all of its 10,000 e-mail users.

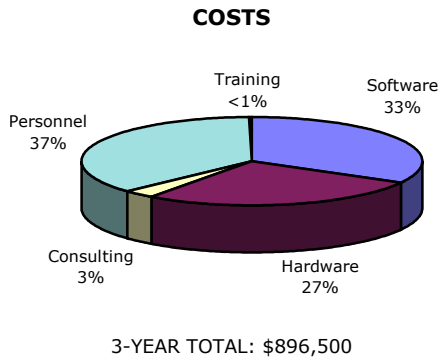
KEY BENEFIT AREAS

Microsoft Exchange Server 2003 has provided MGM MIRAGE with reduced downtime, easier restoration of deleted messages and mailboxes, and easier administration of mailboxes. It has also enabled MGM MIRAGE to centralize e-mail administration in the Las Vegas headquarters, which allowed field IT staff to be reassigned to focus on other projects. Key benefits achieved include the following:

- Reduced downtime. With a clustered environment, MGM MIRAGE can avoid unplanned downtime, much of which was due to hardware issues, and the new environment will provide failover capabilities to keep the e-mail system running. Clustering will also allow the Exchange administrators to conduct maintenance tasks without taking users offline. Work can be done on a passive node then switched over to an active node once it's ready to be deployed.
- Easier restoration of messages and mailboxes. Exchange Server 2003 contains faster capabilities for restoration services and a mailbox retention feature that allows an administrator to specify a period of time before a deleted mailbox is permanently deleted from the system. As MGM MIRAGE deals with accidental mailbox deletions, this new capability will lessen the time it takes to restore a mailbox from three to four hours to a matter of minutes.
- Easier administration of mailboxes. Because MGM MIRAGE employees frequently move to different hotel locations and their mailboxes need to move along with them and because the Exchange administrators need to add mailboxes as new employees join the company, creating and updating mailboxes is an ongoing administrative task. Exchange Server 2003 is enabling the administrators to move mailboxes six times faster than before.
- Reassignment of IT staff. Previously, MGM MIRAGE had four people in separate locations managing the administration of the e-mail system for the different resort properties. Now, with the



administration efficiencies of Exchange Server 2003, the Las Vegas e-mail administrator can handle e-mail administration, freeing up 25 percent of the remote IT staff's time.



KEY COST AREAS

Key costs included software, hardware, and personnel. The largest cost area for MGM MIRAGE's Exchange Server 2003 deployment was personnel, accounting for 37 percent of the project costs. This includes time spent on the project implementation and ongoing maintenance of the e-mail system. Software costs were the second-largest category at 33 percent. Hardware costs for e-mail, storage, and servers accounted for 27 percent.

LESSONS LEARNED

MGM MIRAGE had a smooth implementation process, with no significant challenges other than brief delays to wait for supporting software releases to be in synch with support for Exchange Server 2003.

CALCULATING THE ROI

Nucleus quantified the costs of software, hardware, consulting, personnel, and training over a 3-year period to quantify MGM MIRAGE's total investment in Microsoft Exchange Server 2003.

Direct benefits quantified include cost savings from reassigning existing Exchange administrators to new IT tasks. Calculations were based on the average fully loaded cost of employees multiplied by a correction factor to account for the inefficient transfer of time from time saved to additional time worked.

Indirect benefits quantified include reduced e-mail downtime for end users and administration time savings for activities such as mailbox and message recovery, mailbox creation, and backup and recovery testing.

SUMMARY

Project:	Microsoft Exchange Server 2003
Annual return on investment (ROI)	125%
Payback period (years)	0.80
Net present value (NPV)	573,450
Average yearly cost of ownership	298,833

ANNUAL BENEFITS	Pre-start	Year 1	Year 2	Year 3
Direct	0	70,500	70,500	70,500
Indirect	0	827,857	827,857	827,857
Total Benefits per Period	0	898,357	898,357	898,357

DEPRECIATED ASSETS	Pre-start	Year 1	Year 2	Year 3
Software	0	0	0	0
Hardware	241,800	0	0	0
Total per Period	241,800	0	0	0

DEPRECIATION SCHEDULE	Pre-start	Year 1	Year 2	Year 3
Software	0	0	0	0
Hardware	0	48,360	48,360	48,360
Total per Period	0	48,360	48,360	48,360

EXPENSED COSTS	Pre-start	Year 1	Year 2	Year 3
Software	59,904	78,483	78,483	78,483
Hardware	0	0	0	0
Consulting	26,900	0	0	0
Personnel	48,880	94,000	94,000	94,000
Training	1,567	0	0	0
Other	0	0	0	0
Total per Period	137,251	172,483	172,483	172,483

FINANCIAL ANALYSIS	Results	Year 1	Year 2	Year 3
Net cash flow before taxes		725,874	725,874	725,874
Net cash flow after taxes		387,117	387,117	387,117
Annual ROI - direct and indirect benefits				125%
Annual ROI - direct benefits only				-9%
Net present value (NPV)				573,450
Payback (years)	0.80			
Average annual cost of ownership		551,534	362,008	298,833
3-year cumulative ROI	185%			
3-year IRR	112%			

FINANCIAL ASSUMPTIONS

All government taxes	50%
Discount rate	15%

All calculations are based on Nucleus Research's independent analysis of the expected costs and benefits associated with the application profiled in the accompanying case. Financial modeling tool, format, and methodology copyright Nucleus Research Inc., all rights reserved.