1-04-60 Managing Multivendor Environments
Thomas Fleishman

Payoff

Multivendor computing environments pose significant administrative and operational challenges. IS management must develop clear policies and procedures within which the multivendor installation has to function. This article addresses some key issues to manage in multivendor installations.

Problems Addressed

Computer hardware is rapidly becoming a commodity, and cost is often the primary factor when making hardware acquisition decisions. Because every organization has its own unique situations that affect acquisitions decisions, either a single vendor or multivendor solution may be appropriate, although the single vendor environment of the past is all but disappearing amid equipment downsizing, cost pressures, outsourcing, and the maturing of client/server architectures.

Selection Factors

To determine whether acquiring equipment from other than a single mainframe or processor vendor is appropriate, IS management must weigh several technical and financial factors, including:

·   **Availability.** If a manufacturer does not have a particular component that is required for a specific application, equipment from another vendor may be the only alternative.

·   **Performance.** It is possible that only one vendor's product has the capability to meet specific performance criteria for an installation.

·   **Reliability.** The proliferation of equipment and vendors poses a wide spectrum of alternatives from which to choose, any number of which might be an appropriate solution. However, a specified degree of reliability(i.e., a defined mean time between component failures) may necessitate equipment purchase from a given vendor.

·   **Cost.** Equipment from one vendor may cost less than the equivalent components offered by another. Cost is a difficult issue to address because management must determine whether quality will be traded for savings, or if the introduction of yet another vendor is worth the additional work that comes with managing another vendor. Nonetheless, for many organizations, cost is often the primary criteria for choosing a vendor.

·   **Equipment use and location.** Certain equipment is manufactured to meet more stringent environmental conditions; if such conditions exist, it is important to acquire products that can operate in those conditions. Client/server computing and distributed components introduce equipment use and system administration issues that are different from the ideal environment of the "glass house."

· **Ergonomics.** Ergonomics is important when workstations and terminals are widely used. The size, screen, keyboard, and other physical attributes of the equipment should be considered in an acquisition decision.

Managing Trade-Offs and Risks

Another issue is whether equipment from a variety of vendors meets the performance levels established for equipment currently installed. IS management must assess the risks of installing equipment that does not meet such service levels.

For example, replacing disk drives in an online environment entails a significantly higher risk than exchanging tape or cartridge units. Management may not be willing—or even able—to accept the risk of a vendor's equipment not performing at required levels. The cost savings must be significant enough to offset the risks and the potential expense of backup measures that may be necessary, especially as the growth of online systems and the dependence on the availability of automated systems increases. In many businesses, an hour of system outage can cost anywhere from several hundred dollars to upwards of $100,000, depending on the organization and the application.

Fitting the Current Configuration

Equipment from a new vendor must function in the installation's current configuration. In one location that acquired a new printer, preinstallation testing showed that the printer could not handle all the special and multipart forms required by users. The printer worked well on some forms but not on others. In other instances, the performance of disk drives was outstanding in installations that had relatively low transaction volumes but substantially below required service levels in high volume, transaction-intensive environments.

Quality of Service

A vendor's ability to provide and sustain acceptable levels of service must be assessed. First, however, management should establish internal tracking criteria based on the requirements of the installation. These criteria might include:

· **Response time.** What is the average time that a vendor requires to respond to a service call? Is the vendor willing to commit to such response contractually? Is the vendor willing to work with the organization and share in the cost impact of outages caused by the vendor's equipment or poor service?

· **Repair.** What is the average repair time for a given component?

· **Resource availability.** Does the vendor provide resources (e.g., technical specialists) in a timely manner?

· **Incidence recurrence.** If a specific component develops problems, is it fixed on the first service call or is it necessary to recall the customer engineer?

· **Dispatch location.** Where is the service location from which the repair resource is dispatched? Is the parts depot in the same location? If not, where is it located? How many parts depots does the vendor have? Where is it in proximity to the data center?

·   **Management attention.** In case of serious or recurring problems, does the vendor's management volunteer assistance?

·   **Escalation procedures.** Are clearly established escalation procedures in place in case of extended problem resolution?

Custom Engineering

In a multivendor installation, the level and quality of support from the manufacturer largely determines the success or failure of the installation in terms of equipment performance. Criteria to establish include whether the manufacturer can provide:

·   **On-site support.** Will a vendor's customer engineers be on site, or will they be dispatched from a central service depot?

·   **Continuity.** Will the same customer engineers provide support on most occasions, or will they be randomly assigned from a branch or regional pool?

·   **Experience.** Do the supporting customer engineers have proven and demonstrable experience with the same type of installation and configuration?

·   **Customer engineer support organization.** Are the customer engineers employees of the equipment manufacturer, or are they employed by a third-party maintenance organization contracted to provide service support? If a third-party service contractor is involved, is its compensation partially based on defined performance levels or is compensation strictly on a time and material basis?

·   **Parts.** Are parts stored locally in case of hardware failures that require part exchanges, or will there be potential shipping delays in procuring the necessary items from distant warehouses?

The lack of timely availability of a customer engineer or a critical part can be extremely damaging to an installation's performance, therefore these issues should be addressed before the acquisition of equipment. Clearly stated expectations, policies, provisions, and, if possible, contractual guarantees and penalties should be established with the vendor to minimize problems or to allow the organization to speedily withdraw from the agreement without financial consequences.

For example, one vendor acknowledged that the usual repair support that accompanied equipment purchase was minimal and that timely response could not, and would not, be guaranteed. The vendor did, however, offer an alternative maintenance service contract at additional cost, guaranteeing customer engineer arrival at an installation within two hours. In this case, management was sufficiently impressed with the vendor's equipment to acquire it and pay the higher maintenance charges to obtain guaranteed service.

In another case, management found a third-party service organization had been contracted to support a hardware configuration for a critical application. Although the vendor agreed to certain service requirements, the organization actually performing the maintenance service was not committed to providing the necessary levels of support. Only after lengthy negotiations and considerable expense was management able to achieve the service agreements that were required, and only after incurring significant additional cost.

Financial Standing of the Vendor

Knowledge of the financial condition of all prospective vendors is needed to decide whether they have the proper resources to provide the necessary support and service for the equipment. If the acquisition is sufficiently large in terms of price, or if the equipment being considered is of strategic value, the organization should consider requesting a Dun & Bradstreet analysis of the vendor before concluding any contractual commitments.

Contractual Considerations

The organization might also want to specify certain performance and service criteria for inclusion in the acquisition contract. These criteria can range from service response times to detailed availability targets. Specifically, financial penalties or component replacement may be defined for failure to meet contractual requirements. All contractual demands should be negotiated by legal representatives for the vendor and the organization. The degree of cooperation shown by the vendor during negotiations is an indicator of what to expect after the equipment is installed.

Assessing Equipment Performance and Service Support

Management must establish objectives for equipment performance and service support before evaluating vendor products. Establishing benchmarks and tracking component performance are two generally accepted methods of evaluation.

Benchmarks

Before equipment is acquired, the IS staff should become familiar with the vendor's hardware and its specifications to establish performance benchmarks. Benchmarks are important for assessing whether the equipment is meeting its specified capabilities and whether the vendor is complying with the requirements in the installation agreement. The benchmarks should not only address the specific equipment performance, but if possible, such performance should be benchmarked in the environment into which the product will be used, so that the equipment performance benchmark includes interfaces to other equipment and, where possible, stress testing of the equipment with the volumes of transactions it will be expected to execute.

Component Performance Tracking

The need to establish an organizational unit responsible for tracking the performance of hardware components is becoming increasingly accepted. Component tracking results in a significant payoff. Because a faulty piece of equipment often causes several repetitive and subsequent failures or system degradations, the ability to quickly detect and possibly isolate a faulty device through component failure analysis is a valuable tool for maintaining required customer service.

Component tracking can be used to establish a comparative rating system to help determine which vendors provide satisfactory service. Automated tracking and reporting systems can be developed or acquired, depending on the capabilities of the staff and the requirements of the particular installation.

As an example, one automated tracking system provides a daily report on all failures (both hardware and software) of each major component in the data center. Each month, the

vendor that markets the tracking package provides a comprehensive data base compiled from data supplied by all installations subscribing to the service. The data base indicates an installation's performance relative to that of other centers using the same configuration and brand of equipment. For example, if a center has Central Processing Unit A with disk drive B installed and 12 other centers use the same CPU and disk configuration, the monthly report shows a performance ranking for all 13 subscribers. For IS management to effectively control a multivendor environment, such a tracking system is mandatory, especially in large, multiple CPU installations.

Coordinating Communication Among Vendors

To maintain smooth operations in a multivendor environment, IS staff must coordinate communication among vendors. Problems that involve more than one vendor occur frequently because vendors are competing in an active market that does not encourage intercommunications.

Some managers hold weekly meetings of all vendor representatives who have major equipment components in the organization. Even when there are no specific problems, these meetings are valuable in maintaining open channels of communications among vendors represented in the particular installation.

The issue of communication between vendors and the management of the process cannot be overemphasized. Open systems make equipment interchangeability not only a reality but a necessity, because open systems are competitive and are becoming commodities that are marketed more on price than on functionality.

Software Vendors

It is difficult to keep current with the increasing number of software packages on the market. A turnkey package may be acquired as an integrated system that requires specific equipment that may or may not be compatible with the existing hardware configuration, or the software may be acquired to process a specific application (e.g., payroll, general ledger, accounts payable).

The issues described in connection with hardware vendors remain relevant to a multiple software vendor environment. IS management must implement formal procedures and tools to collect performance data on the vendor's products and institute communication processes that allow the multivendor environment to be managed effectively.

This requirement is becoming especially true as smaller machines spread throughout user areas and as the delineation between information and communications technologies slowly disappears. These factors, along with the development of complex technologies and products, have led to a situation that essentially precludes the ability to maintain a single vendor environment. The proliferation of software, hardware, and service vendors will not only continue, but inevitably increase.

Recommended Course of Action

The installation of hardware and software from multiple vendors is often justified by cost, performance, and availability. As plug-compatible equipment and purchases software continue to proliferate, the process of managing the multivendor environment becomes more complex and difficult.

Managing the multivendor installation involves considering the risk/benefit trade-offs. Establishing a project plan that details equipment and software performance and support is

mandatory. If possible, contractual contingency arrangements should be specified and agreed to by all parties concerned before the installation or implementation of the vendor's product.

What follows is a short but representative checklist of some of the acquisition issues to consider in any vendor or third-party vendor arrangement:

· Objectives to be achieved through a third-party vendor include:

  · Performance (e.g., the vendor may be the only source meeting requirements).

  · Cost (i.e., costs are reduced or benefits per unit cost are enhanced through third-party purchase).

  · Environment (e.g., there are strict constraints in the operational setting that must be accommodated).

· Review of the performance history of the vendor, including:

  · Reference checks of current and past customers.

  · The performance history of the specific product being considered.

· Review of the financial status of the vendor, including:

  · Financial performance history and trends.

  · Installation base trends.

  · Market penetration in comparison with competitors.

  · Privately owned or publicly financed.

  · Size in annual revenues and profits.

  · Debt-to-equity position.

  · Ability to withstand short-term financial setbacks.

· Review of the installed base of the vendor, covering:

  · The number of customers services.

  · The location of the customer base.

  · The rate of new customer acquisition.

  · The rate of existing customer defection.

· Perform a risk analysis that considers:

- · The impact on the procuring organization if the vendor cannot perform as expected.

  · Contingency plans for vendor replacement.

  · Adequate and appropriate contractual protection in case of bankruptcy.

  · Unchallenged use of the product.

  · A statement of fair value purchase price for the bankruptcy trustee.

· Review of vendor management, including:

  · Whether the organization is managed by the owner or professionally managed by a nonowner.

  · Tenure of management.

  · Management turnover history.

  · Management remuneration plan (e.g., is a percentage of management's annual compensation incentive based?).

Author Biographies

Thomas Fleishman

Thomas Fleishman is vice-president and director of information services for Kaiser Permanente in Pasadena CA. He has more than 20 years of experience in information technology and accepts occasional consulting assignments in the management of information and communications technology. Fleishman holds a BS in mathematics from Brooklyn College, a BA in business from University of California at Los Angeles, and an MBA in management and finance from University of Southern California. He is a graduate of the advanced management executive program, Stanford University Graduate School of Business.