

INTRODUCTION

“The rate at which storage requirements change has progressively increased as new types of media quickly migrate into the library environment. Demand for faster access time, reduced cost-of-access, better protection of stored media, and the increasing cost of floor space require continuous improvement of storage equipment and the complete storage process.”

—*This quote from a manufacturer of multimedia storage equipment for libraries, Russ Bassett, expresses the raison d’être for this report.*

The story of how one manufacturer of display equipment got its start and how it sees its future is a cautionary tale for librarians developing a multimedia shelving strategy. PS Professional Store’s founder owned a record store in Germany. When the CD first emerged as the replacement for vinyl records, no equipment was available for housing CDs. The founder decided to fill that gap.

Now the DVD is changing that shelving strategy. In the meantime, PS developed a scan-and-play music preview system that a few libraries are currently using to encourage use of their multimedia collection.

PS sees Compact Flash technology as the future. This technology needs no CD players, no computer hard drives and scanners. Everything is programmed onto a flash card that can be reprogrammed 50,000 times. Academic institutions also see the future with no rotating media; everything will be stored in solid-state chip memory.

The future is an indeterminate length of time away. Future predictions do not necessarily mean future exclusions. The book is still with us, contrary to past predictions, and thriving, with little evidence of fading soon. For libraries, especially academic libraries, this variety of media just translates into more layers of media formats to be housed. The trick is to house them efficiently and at the same time provide for their effective retrieval.

Appropriate storage in specialized storage equipment for multimedia is needed to better organize, access, and preserve it. Knowing the equipment needs for the collection is key to determining the space required for the collection.

Equipment manufacturers have developed cabinets, shelving units, and racks to store virtually any type of object or collection. Knowledge of the types of equipment available helps you make the best decision about the equipment to be used for a specific collection.

Many companies manufacture multimedia storage equipment—some are aimed at the library market, others at other markets but with products that could be used in libraries. Increasingly, manufacturers provide custom-designed solutions to meet a single client’s collection storage challenge.

Five basic equipment types may be used for storing multimedia:

- Cabinets, lateral and vertical
- Cabinets for large flat files
- Cabinets for vertical filing of large documents
- Shelving, racks, and slat walls with accessories for storing many media formats
- Carousels

These equipment types also may become high-density storage systems. Side-to-side sliding shelving/drawer systems and mobile aisle systems with all types of equipment installed on their carriages save space by eliminating the multiple aisles required for stationary equipment. Rotary equipment increases the amount of material that can be stored within a single footprint.

Manufacturers' variations within the equipment types and high-density systems are nearly endless. For this report, examples of the basic equipment types have been provided with a few variations represented by a handful of manufacturers. This report does not provide an exhaustive list of all manufacturers of multimedia storage equipment nor all the possible variations of storage techniques.

In determining what type of storage system to use for a specific medium to be stored, account for the following factors:

- Types of users and their needs
- Size and characteristics of media to be stored
- Media capacity required
- Fragility of medium
- Susceptibility to environmental conditions, including possible reaction to contact materials, such as materials from which envelopes, boxes, and file folders are constructed or coatings on shelves
- Mixed or changing media requirements
- Shelving and retrieval activity levels
- Ease of use, including access for the able-bodied and the physically disabled
- Security required
- Costs
- Relocation requirements
- Combined weight of equipment and media and adequacy of floor-load capacity of the building where equipment to be located
- Floor area available or to be planned; space savings is a particularly important criterion
- Quality of construction of equipment under consideration, especially durability under conditions of heavy loading and use
- Maintenance requirements for different equipment types
- Protection from fire and other environmental hazards

Type of users and their needs

Types of media users and their needs differ widely among the types of libraries requiring various equipment to house media collections. For example, the public library user is more likely to use media for recreational purposes. Public libraries, such as the Baltimore County Library, want merchandising-type housing for their collection to improve patron access to individual titles. At the same time, they require that the equipment be as space efficient as possible. As a result, public libraries can't totally mimic the merchandising done by stores like Blockbuster.

In contrast, the academic library user is more likely to use this collection for research and study, and the collections tend to be substantially larger, requiring denser storage and greater space savings than needed by the public library. These collections are often not directly accessed by the public but are retrieved by staff.

The other significant difference between the public and the academic library is the length of time an item will remain in the collection. Popular use is the key for public libraries. Their collections tend to be kept current by regular weeding.

In contrast, for research purposes the academic library holds items as long as physically possible, even those formats that have long gone out of normal use and for which equipment that allows users to access the media may be difficult to maintain and purchase.

Mixed or changing media requirements

Data media formats continue to become smaller but provide greater capacity and faster access. Although these improvements are good, they require storage equipment with new levels of adaptability.

Storage equipment requires drawers and shelves that may be repositioned easily, without tools or additional hardware if possible, to accommodate media format changes as well as growing multimedia collections and collection shifts.

Individual drawers and shelves require accessories to accommodate mixed media or media-specific applications. Shelf backstops need to be adjustable to accommodate new media depths. These adjustable backstops position the media toward the front edge of the shelf for quicker visual and physical access.

Comparative costs

Comparative costs are difficult to measure because of the nature of the furnishings and equipment trade. List costs rarely apply. When planning for multiple units, substantial cost savings are possible. Market conditions and competition among manufacturers also dictate potential cost savings. Favored customers may realize savings even on single unit purchases from some vendors.

Recommendation: Plan to use the ideal type of equipment for the medium or media to be housed. At the same time, plan for the second and, perhaps, third best systems. Work with the vendors for each type of system to plan layouts and equipment required. Obtain price quotations for the project for each type system under consideration.

Before making a decision, do a cost-benefit analysis. Account for all possible factors including space savings, labor savings, maintenance costs, as well as all the other relevant factors noted above. Even though the equipment may seem costly, taking all types of cost factors into account may show it is in reality the least expensive alternative.

For same-type equipment, obtain price quotations from at least three vendors representing different manufacturers' products. Study this equipment carefully to determine the quality of construction, ease of use, accessories available, and any other factors that may affect use and life of the product. If the project is large, ask the vendor for samples or prototypes to help in decision-making.

Quality of construction

Understanding the quality of construction is essential in the purchase of multimedia equipment. Quality can profoundly impact future service and budgets. Quality should be commensurate with cost; avoid paying a high cost for low-quality equipment.

The highest quality equipment is not required for all applications. If you are storing a discontinued format that receives little use, lower quality and less costly equipment is probably appropriate.

Of course, the opposite also is true. High use, active collections require high-quality equipment. In addition, the heavier the medium stored, the higher the quality required.

Many makers of multimedia equipment provide extensive information describing construction of their equipment. If manufacturers do not provide this information, request their specifications; this information is critical for large installations.

Many manufacturers do not distribute their own products, and the distributors' catalog product descriptions are minimal. In these cases contact the manufacturer directly to obtain their specifications. This contact has been made much easier in recent years via Internet websites.

Protection from fire and other environmental hazards

If the materials to be stored are exceptionally valuable, they may require exceptional protection. In addition, sensitive materials such as paper, film, or other media could be damaged the gas given off by the finishes applied to some storage units.

Fire also is a concern. Although metal files may not burn, they directly conduct the heat of a fire to the interior where the stored materials will ignite.

Underwriters Laboratories (UL) Class 350 and Class 125 ratings signify the maximum internal temperature allowed during the fire test. Depending on the test's length, the external heat ranges from 1,550° F to 2,000° F, but the internal temperatures cannot exceed 350° for paper or 125° for computer media.

To understand UL's hour ratings, you must understand fire and the UL tests. The average fire burns at around 800° F as it passes through a building. The temperature will increase in any area as flammable materials are consumed. This period averages 20 minutes in any location, and then the temperature decreases as the fire moves on.

The UL test consists of two parts: the one-hour burn portion during which a product being tested is subjected to the most intense heat, and the cool-down period that can last 15 to 25 hours and simulates the lower-temperature segment of a typical fire. Most products fail during the latter part.

Computer media is considerably more susceptible to heat and moisture damage than paper, so it must have a considerably greater degree of protection.

After a fire, to avoid spontaneous combustion of its contents, do not open a cabinet until a person can comfortably rest a hand on it.