



Emerging Opportunities in Digital Entertainment Storage

As a broad variety of digital content types continues to display remarkable growth, the storage capacity needed to hold that content seems to be escalating exponentially. Customers may not fully appreciate the impact this escalation has on their storage needs. System integrators should seize this opportunity to educate their clients in the remarkable variety of digital content types available to them and in the fundamental need for storage solutions that ensure their digital content is readily and reliably accessible.

Video, music, games and personal media devour storage

Consider the following table, which details the file sizes of several common categories of digital entertainment content.

Capacity-Hungry Digital Entertainment Content			
	Output Device	Example Digital File	File Size ¹
Video (MPEG4)	High-definition TV	2-hour high-definition movie	10 GB
		1-hour high-definition program	4 GB
	Standard-definition TV	2-hour standard-definition movie	2.25 GB
		1-hour standard-definition program	1.12 GB
	Mobile video (PMP, video iPod, phone)	1-hour program	225 MB
		5-minute "clip"	20 MB
Music	Audio player	4-minute song (128 Mbps)	4 MB
		30-minute audio program (64 Mbps)	15 MB
		Ringtone	<0.1 MB
Games	Console gaming	Console-quality game	2 to 10 GB
		Game data (personal storage card)	8 MB
	Mobile phone game	Game for wireless phone	0.15 MB
Personal Media	Digital camera (standalone, phone)	5-Megapixel photo	2.0 MB
		Mobile-phone photo	0.4 MB
	Video camera	1-hour raw DV/uncompressed	12 GB

¹ File sizes (stated in decimal units) represent what is typical for current files.

DVRs

DVRs are commonplace in nearly every installation, for good reason: DVRs ensure content is easy to find/access through cable and/or satellite providers, and they make it simple to record content, store it and find it later to watch when convenient. TiVo is a prime example of this, its user-friendly interface makes it a favorite among consumers, and this popularity has in turn clearly driven the consumption of more content.

However, integrators find that TiVo and DVRs in general still fall short on several counts. They typically don't provide easy movement of content around the house, and user interfaces are not consistently simple to use.

Furthermore, DVRs offer limited storage expandability. As DVR hard drives fill up, consumers must choose which content to delete before they can add new content. Integrators and consumers alike would love to see DVRs equipped with USB or FireWire connections so that external drives can be used for more storage. TiVo and Scientific Atlanta DVRs include eSATA ports, as do Seagate® Showcase™ storage solutions, which also connect through a USB 2.0 port and which provide up to 1 TB of additional capacity to make HD recording practical—even with legacy DVRs.

Sales Tip

Don't overlook selling multiple servers to homeowners who may own a second home, yacht or RV. Servers synced and filled with all the homeowner's content are very convenient and open up great sales opportunities.

SYSTEM INTEGRATOR PROFILE

Michael Rock of Electronic Home Concepts has found the ability to record live-TV events to be a popular feature requested by his clients. One client in particular is an ardent fan of professional basketball, and he and his wife love recording games in HD (when available) and making them accessible on-demand on any TV in the house via their media server. They often show these games while entertaining guests at their home.

In response, Electronic Home Concepts installed an extensive, home-wide Ethernet network with a Fuse Media hardware/software solution that utilizes the Microsoft Windows Vista platform in the background in concert with a custom Fuse Media interface. The clients are able to capture HD content from a cable provider straight onto a PC-based DVR and make it available in any room in the house.

By presenting such a powerful and innovative solution to this client's request, Electronic Home Concepts not only won the project but also found it easy to upsell the customer into a complementary array of HD displays and high-quality storage solutions. This comprehensive approach ensured that the client felt confident, comfortable and proud to show off the system to his guests.

Sales Tip

Controlling client expectations is arguably the single most important task an integrator must accomplish. Well-managed expectations consistently result in successful projects.

SYSTEM INTEGRATOR PROFILE

Derek Flickinger of Interactive Home, Inc. has kept his company at the forefront of both the CableCARD and Microsoft Media Center Edition (MCE) platforms. Recently he and Bill Raymond of RNS Technology Group have discovered some exciting capabilities built into certain Motorola set-top boxes. These capabilities enable them to record near-HD content onto the MCE platform via standard off-the-shelf MCE tuner cards, and then stream it to any/all MCE extenders within the home.

Flickinger makes a compelling case for MCE-based solutions: "A Windows Media Center-based whole-home entertainment system has several advantages over other, more proprietary choices. These include the ability to handle movies and TV in all their high-def, 1080p glory and easily pump that content to any room in the house, without losing any quality. And, since the system is PC-based, it has the ability to drive higher-end components and connections without requiring you to stick to one particular brand or technology standard.

"A key advantage of this setup is a highly simplified remote that lets the on-screen interface do the heavy lifting. This is in stark contrast to other systems' remotes that require fumbling around in the dark to read a little screen or find one of 20+ buttons."

Tips and Tricks

Movies require far more storage capacity than music or photos, and HD movies are even more storage-intensive. Most integrators specify a minimum of 3 TB of storage when they sell a movie-centric media server.

Thus while DVRs play a vital role in content delivery to the consumer, at present their potential growth is limited by several factors. As integrators await the resolution of these challenges, they are looking for alternative systems that give clients the access to content that they so eagerly seek. CableCARDS represent one such alternative.

CableCARDS

Many of the integrators surveyed confirm that clients want to consume TV content delivered by local cable and/or satellite companies, store that content and then time-shift it or place-shift it to another location in the home. A multitude of challenges can thwart such an arrangement, and integrators are divided as to how they overcome these challenges.

One group has taken a wait and see attitude, lacking the time or inclination to become beta testers for manufacturers just coming to market with CableCARD solutions. These integrators are committed to only selling and installing products with proven track records. However, such firms know they risk falling behind the technology curve and losing sales opportunities.

Another group of integrators is proactively working with manufacturers who support CableCARD and set-top boxes that include limited integration features with Microsoft Media Center Edition (MCE) devices. However, this group of integrators is very selective in waiting for the right customer to which they can offer these options. Challenging deployment and lofty client expectations typify such systems; the best clients enjoy tinkering with hardware/software and don't mind jumping through technological hoops.

Indeed, such early adopters are proud of their technical sophistication and are eager to examine the benefits of leading-edge media technologies. These clients can play a vital role in helping integrators to refine and expand the capabilities of their media system offerings. Prepared to deal with system foibles and glitches that would frustrate typical customers, these more tech-savvy clients can be a goldmine of information and experience.

In addition, integrators are finding success when selling CableCARD media centers into commercial/public environments such as restaurants and government agencies. A further measure of the growing popularity of CableCARD solutions: companies that offer CableCARD capabilities on their media centers are shipping 40 percent of their systems with the CableCARD option installed.

Music

As downloadable music becomes more available thanks to competition, DRM-free content, legal file sharing and other market forces, consumers are building ever-larger music libraries. Additionally, "high-resolution" music is growing in popularity. Each of these factors is creating new opportunities for integrators to sell capacity-rich storage solutions.

Movies

While DVDs are still the most popular way for consumers to engage with movies, there is growing demand for hard drive-based content as the limitations of DVDs become clearer. It's cumbersome to play DVDs throughout the home, though over the years integrators have found many

SYSTEM INTEGRATOR PROFILE

Criteria president David Tovissi services customers in three distinct markets: single-family residences, condo/high-rise residences and yachts/marine vessels. David explains that while only 15 to 20 percent of his customers initially request media servers, nearly 100 percent have them installed once they've seen a demonstration that shows how convenient these servers are.

Beyond the benefits of owning a hard drive-based media server in their primary residence, Criteria customers who own multiple homes and/or yachts can also enjoy having all their content automatically synced and available on additional media servers. This not only makes all of a client's digital entertainment instantly available at a variety of locations, it also doubles as a convenient backup system should one server fail.

Consumers are notoriously unreliable when it comes to performing backups, and many may balk at the additional cost for storage components that typical backup systems entail. Here Criteria elegantly addresses two key requirements with a single solution, making content both vastly more accessible and more secure.

Tips and Tricks

When deciding which DVD server solution to use, make sure you understand how each product stores consumer-captured content. Some products require that content first be burned to a DVD and then ripped onto the DVD server—not very user-friendly. DVD servers that offer USB or FireWire file transfers are much more practical for the consumer.

ways to make this possible for their customers. Regardless, the physical nature of DVDs is inherently more limiting than a hard drive-based solution.

Companies such as Kaleidescape and Axonix are proving that consumers are eager to store all of their movies on a central home server, where they can be easily cataloged, searched and accessed from any TV or video screen in the home. This convenience factor is driving greater demand for more movies in the home and is so compelling that integrators are consistently achieving 40 percent (and higher) margins when selling these types of storage solutions.

What's more, the emergence of streaming and/or downloadable movies is further accelerating the demand for hard drive-based movie solutions. Integrators who provide their clients with storage solutions that can accommodate this growing appetite for downloaded movies have seen their efforts pay impressive dividends.

The popularity of HD movies is another significant contributor to the consumer's growing need for storage. In addition to Blu-Ray DVD discs, companies such as Vudu, Netflix and Movie Link offer consumers download and streaming options that eliminate the physical disc. Every Integrator surveyed for this study is currently testing movie download options that can be integrated into their clients' homes, thus merging online convenience and hard drive-based content accessibility.

Video

User-generated video content (for example, home movies) represents a rapidly growing storage opportunity. Seventy percent of the integrators interviewed said consumers are asking for better ways to manage personal video content.

Significant opportunities exist for companies that can provide consumers with simple mechanisms to move their content between devices, watch it on TVs throughout the home and easily manage it through a simple user interface.

Movies

Similarly, personal photos are driving the need for greater storage capacity in the digital home. The Consumer Electronics Association recently reported that the average consumer now owns an average of 10,000 photos. Many integrators are being called upon to help consumers with this content.

As with other visual content, consumers want to be able to view their digital photos on TVs around the house, while being able to quickly and easily access those photos via a simple and easy-to-navigate user interface. As the picture quality of consumer cameras continues to improve and prices keep dropping, digital photography will drive even stronger demand for convenient and simple storage solutions within the home.

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Sales Tip

Simple and convenient solutions are worth a great deal to most consumers. System integrators uniformly agree that they charge a premium for convenience, and that clients are happy to pay more when that ease of use is demonstrated.

SYSTEM INTEGRATOR PROFILE

Bill Maronet of ETC has a customer who wants ETC to provide a solution that can manage over 30,000 photos and make them available on every one of the 20+ TVs throughout the client's home.

Accommodating this vast number of photos presents compelling opportunities for proactive integrators such as ETC. Beyond prompting the sale of additional storage capacity, such systems also enable integrators to differentiate their services from more conventional solutions by delivering a user interface that makes organizing and accessing this multitude of photos seamless and intuitive.

Furthermore, the sheer number of TVs involved in this installation ensured ETC would achieve significant sales of expander devices, as each TV in the home must utilize an extender to receive the incoming data from the centralized media server and convert it to a video signal the TV can read.

While a fairly extreme case, this illustrates the growing desire of consumers to engage with the photos they've taken. Providing simple ways to do this vastly enhances the value of photos to the client, which in turn greatly increases the value of the storage solutions (and their user interfaces) that hold those photos.

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Author

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