

# On-Demand Access to Rich Media Assets

*Making the Decision to Use a Service Model Approach  
for Digital Media Management*

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## **Abstract**

The maturation of digital asset management technology and products has enabled on-demand DAM services to emerge as an attractive alternative to on-premises installation. Organizations facing a variety of problems and constraints, such as speed to market and scalability, are finding software services models to be the most cost effective approach to digital asset management. This paper identifies the four key factors in making the decision between a services model and on-premises installation. It also argues that the decision should be analyzed in terms of discounted cash flows and presents examples of such calculations.



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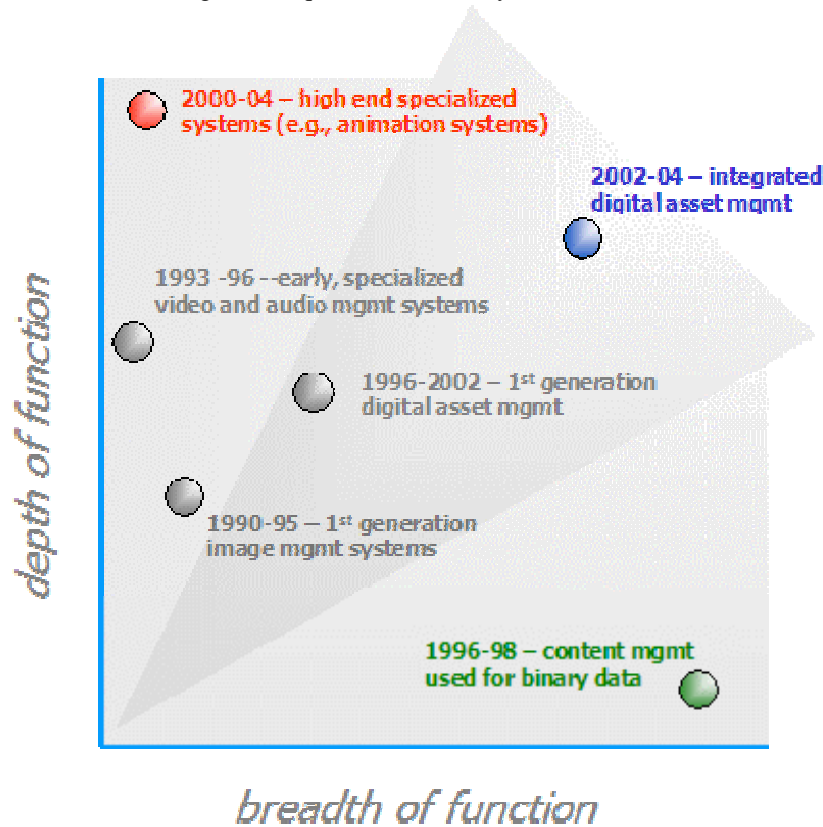
# Mature Capability

## *Digital Asset Management Comes of Age*

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### The Emergence of Broad Capability and Deep Functionality

Digital asset management (DAM) began as a way to control, store, and reuse rich media assets such as high-resolution images, audio, video, animation, and other kinds of multimedia. The early applications typically focused on a single kind of media, providing, for example, the capability to store, retrieve, and transform different audio formats. The need was to meet a functional requirement that could not be met in any other way. If the software used proprietary formats, or if it could not be integrated with other tools, that was a sacrifice that customers made in order to get the required functionality.



Two forces interacted to change this picture. The first was an increased expectation from customers that media formats should use open standards. This was coupled with a preference for architectures that use standard application interfaces such as CORBA and COM. These expectations were accelerated by the emergence of Internet standards and protocols as an accepted part of the corporate IT environment.

The second force to move DAM toward more general applications and broader utility came from the direction of content management vendors, who offered systems that could provide at least some of the management capability of DAM, while serving a much broader range of needs within an organization.

Over the past decade the intersection of these trends has driven the creation of a much broader, richer, more interoperable selection of DAM products. The diagram on the preceding page provides a sketch of this evolution.

On the left side of the diagram are the systems that meet specialized needs. The early DAM systems started here, serving a variety of vertical applications. At the very highest levels of functionality there are still systems over on this side of the diagram, meeting demanding requirements such as support for creating digitally animated motion pictures.

At the far right, closer to the horizontal axis, are the early systems offered by content management vendors. These systems did not offer the powerful conversion tools and other capabilities of the more specialized systems, but they did offer the important advantage of enterprise-wide deployment and integration with other content.

The cone running up the center of the diagram shows the path followed by most DAM vendors selling outside the highly specialized, high end markets. In the late 1990s and early 2000s the first generation of these systems offered more general functionality than had been available from earlier systems focused on a single kind of digital content, and began to offer capabilities that rivaled those of more specialized products.

In the last few years these systems—some offered as stand alone products and others offered as part of a management “suite” by content management vendors—have focused on the ability to integrate DAM into the full content management environment.

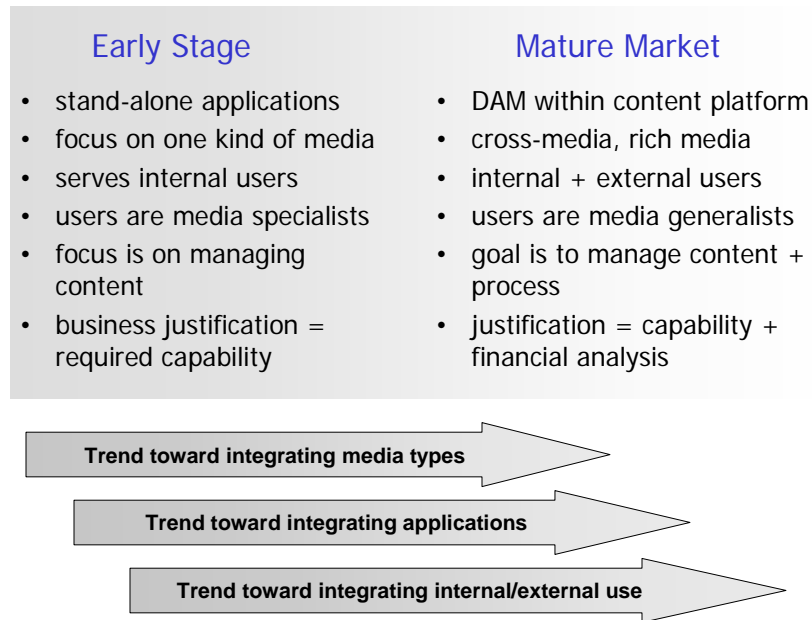
The result is that the offers from leading DAM system suppliers can now all handle a broad range of media types, handling transformations invisibly. DAM is no longer just a tool for specialists. Companies are now deploying DAM systems that provide consistent access to brand images, product campaigns, and other marketing assets across an organization.

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### Changes in DAM Use and Expectations

The increased capability and breadth of digital asset management has fed customer expectations, and customer expectations have, in turn, accelerated DAM development and evolution. The outcome of this increasingly tight cycle of customer expectation and vendor response is not only products that are more broadly applicable and deeply functional, but also a change in the way that companies expect to deploy them.

The following chart summarizes some of the key elements in the transition from DAM’s early application as a point solution to its current position as a part of the emerging enterprise content infrastructure.



The change in focus from managing content to *managing process as well as content* is particularly important since it implies integration of the digital asset management system within the organization's broader information infrastructure.

Extending the system to external users is another key change. It means that the digital asset management tools must operate within a secure environment. It also means that the system cannot require use of special client software or special training. Finally, for many organizations, the extension to external users implies access to more complete and more thorough customer support, in some cases with worldwide, 24x7 availability.

Mature application of digital asset management is usually matched with an equally mature business decision process. Deployment is often no longer a departmental decision that can be justified on the basis of a list of internal requirements. The choice between alternative approaches to digital asset management has moved beyond a comparison of functions and features to become a capital budgeting decision. As with any other major expenditure, organizations now review alternative DAM approaches in terms of initial investment and ongoing cash flows in and out.

There are now many capable digital asset management systems to choose from. The focus is on finding the system that has the greatest positive financial impact on the organization.

# DAM on Demand

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## Organizations Can Now Deploy DAM as an On-Demand Service

One important consequence of the maturation of DAM products and capability is an increase in choice for companies that wish to take advantage of the efficiencies and capabilities that DAM offers. There are a number of very capable products in the market. Although the products do differ in a number of ways, they have broadly comparable capabilities. The result is that a company shopping for DAM can focus on the “business fit” of the solution, rather than just on the technology.

The “business fit” is, of course, related to how an organization intends to use the DAM system. But it is just as much a function of what the organization already has in place. Does the organization already have an information technology infrastructure? Are the machines, systems software, IT staff, and support staff already in place? Is there a good match between the application requirements and the current IT capabilities?

### Beyond Theory: Sesame Workshop as an Example

The interaction between in-place capability and DAM system goals and requirements is easiest to see in the context of a specific example. Consider Sesame Workshop, the non-profit organization that develops, licenses, and delivers educational content for children.

Sesame Workshop distributes content to 148 different countries through four major distribution channels: publishing (books and magazines), TV and home video, merchandising, and online media and interactive games. Success for Sesame Workshop depends on its ability to get its content into the hands of its licensees. This content delivery and content exchange can be for:

- **Pre-selling**, to enable current licensees and potential licensees to sample Sesame Workshop content and services. Digital asset management in this pre-selling context is coupled with CRM (customer relationship management).
- **Fulfillment**, to deliver artwork style guides, and other content to licensees.
- **Creative Sharing and Collaboration**, such as reviewing new television segments (in low resolution format) developed by production partners around the world.
- **Expansion into New Markets and Territories**, quickly and inexpensively providing samples of what Sesame Workshop does as a company, and of the content that it offers, into countries or territories that are not familiar with Sesame Workshop.

For Sesame Workshop, the great advantage of digital asset management is that it can potentially provide a single fulfillment and delivery system for all of Sesame Workshop's content application requirements, across each of the four different content distribution channels. For example, with the right DAM investment, Sesame Workshop can deliver books or artwork in the same way that it delivers videos, and it can do this equally well in New Jersey or New Delhi. Further, the right system will enable Sesame Workshop to move beyond the classic searching and viewing activities associated with digital asset management to include CRM and e-commerce in an integrated environment.

As is so often the case, Sesame Workshop found that the scale of the potential benefits was matched by the scale of the challenges that the organization faced.

- As an organization doing business in 148 countries, Sesame Workshop would need to supply 24x7 support for any system that it deployed.
- Because this was a completely new application, Sesame Workshop needed a way to continually scale up the system as it built out the full solution, starting in simpler applications such as presales and fulfillment for the publishing units, and expanding to applications requiring more bandwidth and capability. This made sense operationally, but from a budgeting standpoint, the need to purchase bandwidth and equipment capable of supporting future growth conflicted with near term cash flow constraints.
- Sesame Workshop brought only a modest IT infrastructure and staff to this application. Before embarking on its DAM initiative, content was exchanged physically, through express carriers and the postal service.

The combination of demanding requirements, significant startup costs, and modest preexisting corporate infrastructure and capability kept Sesame Workshop away from digital asset management and fulfillment for years. They knew it had great potential; they just couldn't figure out a way to implement it.

What changed was the emergence of digital asset management as a service – as a “utility” that Sesame Workshop could subscribe to in the same way that it subscribes to phone service or electric power. Sesame Workshop contracted with IBM, which not only hosts the hardware and software, providing bandwidth and storage as needs expand, but which also provides the 24x7 customer support, the system security, and the integration with other products that Sesame Workshop requires.

The Sesame Workshop deployment has now moved beyond “proof of concept” into a prototype phase. Analysis of costs and returns is ongoing as the system expands, but even at this early stage the financial aspects of the deployment look promising. With over 7,000 licensees to serve just on the merchandising side, Sesame Workshop estimates that it will save over a quarter million dollars a year just in shipping expenses for the merchandising part of the operation. Beyond the cost savings, the company anticipates increasing revenues by being able to turn around licensing agreements more quickly and by being able to address new markets more aggressively.

### **Learning from Sesame Workshop:**

*The Sesame Workshop example illustrates the benefit that can be derived from a services model approach to digital asset management, enabled by the maturation of DAM as a technology and market. Sesame Workshop cannot afford to be an “early adopter” of such technology, deploying in-house staff to break new ground and experiment.*

*Instead, the organization needs to be able to treat the technical issues as something that someone else can handle, focusing on the business issues.*

*The example also shows that an on-demand solution can be the right choice when:*

- *funds for up front investment are limited*
- *an organization has 24x7 service requirements*
- *an organization does not have substantial existing IT infrastructure*

*What other kinds of organizations might benefit from an on-demand services approach to digital asset management?*

### **Other Organizations, Other Challenges**

As an organization at the other end of the technology spectrum, consider the situation faced by a high-end network technology provider that is developing a new product offer for its clients. Digital asset management enables part of this company’s broader offer.

This company employs a large in-house staff that is capable of developing its own digital asset applications and that certainly can install and support licensed software. The 24x7 support staff is already on board, the hardware required to run the system is readily available, and the high bandwidth connections are in place.

Because this is a new product launch, the company did a full cash flow analysis of expected revenues and investments. The analysis showed that time to market—having the product available for key, early customer events and generating early revenues—was an important factor in the business case. This need to get to market quickly was the deciding factor in the choice between contracting for digital asset management as a service, on the one hand, and developing an in-house solution, on the other.

A secondary consideration for this company was flexibility. Since it is rolling out a new product, customer response might necessitate changes to product function and configuration. By outsourcing the DAM component, rather than building it in house, the company is able to bring down up front costs, which in turn decreases the cost of switching out components or moving the product in a different direction.

## On-Demand Model or On-Premises Installation? – Key Decision Factors

The availability of digital asset management as an on-demand service opens important options for customers, as these examples illustrate. The availability of new options brings with it the need to make new kinds of decisions: under what circumstances should a company choose an on-demand services approach to DAM? When does installing licensed software on-site make more sense?

In general, there are four factors that will interact to move an organization toward a services approach or toward an on-premises installation:

### Hardware, Support, and Facilities Management Capability

As the Sesame Workshop example illustrates, an organization with only modest in-house technology and support capabilities will typically find that a services-model solution is more financially attractive than an in-house one.

You should pay attention not only to the facilities management and IT costs, but also to the cost of providing customer support. If your customers need 24x7 support, or if you are not already running a support center, then the customer support costs, alone, might be sufficient to make the case for a services model solution.

Are your users primarily external, with high support demands? Are they globally distributed? Can you get by with 12 hour-a-day support and no support on weekends? Or do customers need help as problems arise?

Support costs comprise a substantial part of the ongoing, month-to-month costs and value of a services-model approach. Accurate assessment of your requirements, your in-house capabilities, and the costs associated with expanding those capabilities is a key factor in making the decision between an on-demand service model and an on premises solution.

### Time to Market

Do customer events, or the demands of your business model, require you to have a system up and running in three months? If so, there is a strong case for an on-demand solution.

### User Access: Internal or External?

Is the application primarily for internal use, behind the firewall? Or will you be communicating with external users over the Internet?

The question matters if you need access to substantial bandwidth or if you expect your bandwidth requirements to be irregular.

For most companies, usage is a mix of internal and external access. At one extreme, if your needs are for high bandwidth use *internally*, you will probably want to install the system on-premises. It is usually hard to justify paying a hosting service for providing large amounts of bandwidth back and forth over the Internet as a way to serve internal users.



On the other hand, if you are distributing large amounts of data to *external* users, it will often make more sense to buy that capability as you need it, particularly if the use is irregular. By subscribing to the service as a utility, you can get access to potentially enormous bandwidth if you need it – more than you would typically want to pay for on a continual basis.

If your bandwidth requirements are modest, the internal/external distinction is usually less important.

### **Storage Requirements**

Vendors providing DAM as a service charge for storage, of course. The base service offer will include some amount of storage as a standard part of the offer; you will pay more as you use more.

The marginal cost of storage through a vendor is usually higher than the cost of adding and supporting more storage on an in-house system, given the rapidly falling cost of storage hardware.

Consequently, if your application requires unusually large amounts of storage capacity, this could be a reason to move in the direction of an on-premises installation, assuming that the other parts of the solution (hardware, staff, appropriate levels of support) can be put in place at reasonable cost.

It is also possible to work with services vendors to create hybrid solutions that combine on-premises storage with hosted storage to bring down storage costs while still getting the other advantages of the services-model.

There are, of course, other factors, such as access to broad functionality. It is possible that a DAM services vendor can provide access to other software services—such as CRM, e-commerce services, data warehousing, and more—at a price that is attractive when compared to the alternative of licensing, installing, and supporting all of this capability in-house. In addition, working with a services vendor can provide you with a degree of insulation from problems associated with system evolution and obsolescence over time. Given the right contract terms, this can be the vendor’s problem, rather than your problem.

The four factors identified in this table are the key considerations for most organizations looking at the choice between on-premises installation, on the one hand, and contracting for DAM services as a kind of information utility, on the other. Because the different factors can point in opposing directions for a particular organization, finalizing the decision typically comes down to “running the numbers.”

## By the Numbers

*For most companies, making the right decision means comparing the cash flows of the alternatives*

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### Pay Now or Pay Later

The choice between installing a DAM solution on-premises and contracting for it as a service is a little like the choice between buying a car or leasing it. If you buy the car, you have to come up with more money up front, but that might be a good investment if you intend to keep the car for awhile. Making the lease vs. buy decision requires comparing the benefit of different sized expenditures over different time periods. Is it better to pay more now, in order to pay less later? Or is it better to pay less, but over a longer period of time?

Said another way, in financial terms, the decision between DAM as a service and DAM as an on-premises installation involves comparison of discounted cash flows. Here is an example of what the numbers might look like, assuming a 10% cost of capital:

	Service Model	On-Premises
<b>Initial Costs</b>		
One-time charge or license	\$ 17,000	\$ 200,000
Consulting cost for setup	50,000	75,000
Hardware	-	90,000
<b>Total initial costs</b>	<b>\$ 67,000</b>	<b>\$ 365,000</b>
<b>Monthly charges</b>	<b>\$ 14,000</b>	<b>\$ 7,000</b>
<b>Present value of expenditures over 3 years</b>	<b>\$ 500,877</b>	<b>\$ 581,939</b>
<b>Present value of expenditures over 5 years</b>	<b>\$ 725,915</b>	<b>\$ 694,458</b>

The one-time charges (or license costs in the case of an on-premises installation) are representative of what users would pay for a system such as IBM Content Manager coupled Ancept Media Server, delivered as an on-demand service or an on-premises installation. Consulting and set up costs vary, but are typically somewhat higher for an on-premises installation.

The \$90,000 of hardware investment for the on-premises system would vary substantially from company to company, depending on what is already in place and what can be repurposed. In this case we are assuming that there are some substantial hardware expenses.

The monthly charges are the critical factor in this calculation, since it is obvious from the outset that the on-premises approach will have higher initial costs. The \$14,000 monthly fee

associated with an on-demand services solution from IBM includes 24x7 support, extraordinarily secure facilities, multiple redundant systems, and more. Clearly, if an organization had to put such systems in place, or contract for such services, the monthly costs would exceed \$7,000. So, the \$7,000 per month figure for the on-premises system in this example assumes either that such capabilities are already substantially in place, or that some of this high-end capability is not strictly necessary in the particular instance.

The important point about the numbers in this particular example is that the alternatives are roughly equivalent in terms of present value. If you look at a three-year time frame, the savings in up-front costs tip the decision in the direction of the on-demand solution, where the present value of expenditures is just over \$500,000, compared to more than \$580,000 for the on-premises solution. Over a five-year time frame the continued monthly savings from the on-premises solution tip the scales the other way

What this means is that, assuming a 10% cost of capital and initial costs as estimated in this example, the services model approach is more and more attractive as monthly costs increase beyond \$7,000 a month. On the other hand, if the monthly on-premises costs were substantially less than \$7,000 a month, the on-premises solution would be increasingly attractive. Of course, changing the up-front costs also has an effect on the decision.

As an illustration of the effect of an increase in the monthly costs, here is the same table, with the same assumptions, except that monthly costs for the on-premises approach are assumed to be \$10,000. As you can see, the present values of the costs for the on-demand services solution are well below those of the on-premises alternative.

	Service Model	On-Premises
<b>Initial Costs</b>		
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Consulting cost for setup	50,000	75,000
Hardware	-	90,000
<b>Total initial costs</b>	<b>\$ 67,000</b>	<b>\$ 365,000</b>
<b>Monthly charges</b>	<b>\$ 14,000</b>	<b>\$ 10,000</b>
<b>Present value of expenditures over 3 years</b>	<b>\$ 500,877</b>	<b>\$ 674,912</b>
<b>Present value of expenditures over 5 years</b>	<b>\$ 725,915</b>	<b>\$ 835,654</b>

What if the cost of capital is greater than 10%? In that case, a dollar in hand today is even more valuable than a dollar a year or two from now, and the on-demand services solution, with its lower up front costs, is increasingly attractive.

If the cost of capital is less than 10%, just the opposite is true: future dollars begin to be more and more like current dollars, and the idea of spending now to save later is increasingly attractive.

*If you are not familiar with the idea of “present value,” that’s not a problem because it is an easy concept to understand. Would you rather have \$36 now, or \$1 a month for 3 years? The \$36 now, of course, because if you invest all the money up front, you will end up with more money after three years than if you invest it at the rate of \$1 a month. In other words, you “discount” future payments, relative to money in hand now – they are just not worth as much. The “discount rate” is the rate at which you could earn interest ( or, if you are having to raise money, your cost of capital).*

*What if you were offered \$25 now or \$1 a month for 3 years? Unless the discount rate is really high, you would be better off with the monthly payments. (For example, at an interest rate of 10%, investing a dollar a month for 36 months would result in \$41.78. The initial \$25, compounded monthly at the same rate, would only turn into \$33.70 at the end of the three years).*

*If your cost of capital—or your discount rate—is 10%, the point at which you would be indifferent to the choice between money now and three years of monthly, \$1 payments would be when the offer of immediate cash was \$31. Either way, you would end up within a penny or so of having \$41.78 at the end of three years.*

*What this means is that, with a 10% cost of capital, each \$31 of up front spending can be offset by a \$1 difference in monthly costs over a three-year period. So, for example, you could afford to pay an extra \$155,000 up front if that investment would end up saving you \$5,000 a month in payments.*

*Or, to run the numbers the other way, you can pay a hosting service an additional \$5,000 a month, for three years, if that hosting service can save you at least \$155,000 up front—again, assuming that raising money costs you 10%.*

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## Translating Decisions into Numbers

When making the decision to seek an on-demand DAM solution or one installed on-premises, most companies tend to focus on their internal capabilities. Do they already have the ability to provide 24x7 support? Do they have IT infrastructure and staff already in place? These kinds of internal inventories tend to take precedence over financial analysis. We know this from having talked to companies using these systems. If they have got support capability and an IT shop in house, they tend to think in terms of installing a system, or sometimes even in terms of building their own. On the other hand, if they don’t have those capabilities, they tend to think in terms of outsourcing.

The impulse to simplify, and to skip the math, makes sense up to a point. But organizations should also remember that there are many ways to assemble an outsourcing package. An organization can mix internal assets and capabilities with external services. It can also contract for different kinds of services, at different levels of cost and capability.

Organizations also need to be careful is estimating the actual costs of using or expanding internal resources. Additional capacity often does not scale up in smooth increments: A small

increase in capacity might require substantial new investment. Further, start-up and training costs for a new system can be substantial, and are often underestimated.

For all these reasons, simply looking at current capabilities, without a careful consideration of start-up costs and on-going costs, can lead to decisions that cost more, or provide less functionality, than available alternatives. Discounted cash flow analysis, with its ability to compare the value of different expenditures over different periods of time, gives organizations the framework for comparing alternatives to find a truly optimal approach to digital asset management.

Companies should also note that the cost of capital is going up as we write this paper. This makes discounted cash flow analysis, rather than a simple “total cost of ownership” calculation, increasingly important. It also makes services-model solutions, with their lower up front costs, an increasingly important option.

The maturation of DAM software gives organizations the opportunity to be able to choose between on-demand services solutions and on-premise installations as real alternatives that can offer real functional equivalence. The choice between alternatives should be increasingly a financial one, and less and less a technical one.

## Conclusions

*With the maturation of DAM technology, On-Demand DAM services should be on your shortlist of options*

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### **Digital Asset Management is a Mature Part of Content Management**

Digital asset management is no longer a tool that is just for media companies or for companies pushing the envelope of content management. The technologies have been around for well over a decade and have matured from special purpose applications, using proprietary formats and interfaces, into applications with broad functionality that can be integrated into enterprise content management environments. Although competing DAM systems are differentiated in a variety of ways, all the leading systems offer broad functionality that can meet the needs of many business applications of rich media and mixed media. This frees buyers from a primary focus on technology matters, enabling more complete consideration of business issues.

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### **On-Demand DAM Services are a Real Option**

The maturation of DAM has opened the door to on-demand services solutions that can meet the needs of a wide variety of organizations. It is now feasible for organizations such as Sesame Workshop to use DAM as a strategic tool, without having to invest in the creation of an IT organization, a technology support organization, and more. Even if a company has in-house technology and support capabilities, on-demand DAM services can open opportunities when time-to-market requirements are short or when flexibility of options is important.

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### **Four Factors Shape the On-Demand/On-Premises Decision**

Most organizations find that the decision between an on-demand approach and an on-premises approach to DAM depends on a consideration of (a) in-house technology and support capabilities; (b) time to market considerations; (c) whether use is internal or external; and (d) storage requirements.

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### **Do the Numbers to Find the Right Answer**

These four factors will not necessarily line up in the same direction. For this reason, as well as because organizations have access to a number of outsourcing and investment alternatives, the way to approach the on-demand/on-premises decision is through discounted cash flow analysis.

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Companies adopting digital asset management have new options for bringing first-class capabilities into their organizations. IBM's goal in underwriting this white paper is to help them make an informed decision about the best fit for their needs, both present and future. As the paper points out, there are cases for hosted solutions for on-demand access to digital media and cases for on-premise software solutions. Our interest is in ensuring that adopters of DAM choose the approach that best matches their business and technical needs.

No matter which DAM approach is right for your organization, IBM offers services that will speed time-to-market and time-to-ROI. With Integrated Technology Services, part of IBM Global Services, IBM provides the infrastructure planning and preparation and the implementation services to make your organization ready and productive with digital media. Our teams can help you formulate new business resilience strategies required by the introduction of rich media applications into your current environment – storage policies, retention policies and privacy policies may all require updating to support DAM applications. We can help you understand which rich media assets need to reside nearest to your end-user communities in order to maximize the throughput and performance of your network. Our teams have the capability to perform a network analysis to help you understand where current bottlenecks may exist in your network. We can model the additional load that the transfer of large rich media files will place on the network with the goal of avoiding newly created bottlenecks and stress points. When it comes to large-scale implementations, no one surpasses IBM in the management and rollout of critical components of digital media infrastructure, from centralized servers to storage networks to field devices such as POS, ATMs, kiosks or other innovative digital media playback devices. We can help you design and implement all components necessary to support your digital media distribution requirements in order to meet your strategic business objectives.