A Survival Guide to Customizing and Outsourcing a DAM System

By Ron Roszkiewicz

Selecting a digital asset or content management system is like ordering from a Chinese menu. Pre-configured dinners made up of traditional favorites will please most people most of the time. Substitutions not allowed. Or you can assemble a meal based on a la carté appetizers, entrées and desserts. Both approaches can work; it's just a matter of taste, budget and your sense of adventure. Similar choices hold true in selecting a digital asset management system.

It seems that every company, regardless of size, that deals with even a modest amount of intellectual property has some form of basic management scheme or system, be it a simple light box application with a built-in database or mounted volumes and folders. Within a corporation, a department behaves a lot like a small company, and the filing system at a compartmentalized design group in a Fortune 500 corporation might be the same one a freelance photographer uses.

Across departments, however, companies are under increasing pressure to control their valuable digital assets for syndication purposes or to comply with tighter governance requirements brought on by new rules such as Sarbanes-Oxley. To accomplish this, they will have to have to build a custom digital asset management system that's integrated with the appropriate systems and sites.

The main problem buyers face when making their initial forays into the DAM world is that no system will satisfy their needs entirely. Some level of customization will be necessary to, for example, migrate legacy data, automate metadata and make the DAM system interoperate with external systems. With that in mind, it becomes a question of perspective: How do you find a system that satisfies your needs today and can grow to accommodate them tomorrow? And once you identify the right system for your company, how do you customize it without owning the responsibility for supporting the entire system?

This article addresses some of the main customization issues users face enhancing a stock system. The result for some readers might be to identify functionality or hooks necessary in the system they are considering purchasing. For others, it might shed more perspective on issues they will face in building a workflow and acquaint them with what is available and possible today.

Navigating Customization Options

Below is a selection of the most common customizations requested when implementing a digital asset or content management system. Most of them are chargeable options provided by system vendors and service providers. Perhaps the most important component in the entire project is the service agreement set. Since most systems require some customization, a master agreement for the main system will commonly include agreements for peripherals, customization and ongoing support. This document not only covers 15-20% of recurring costs, but also serves as a roadmap for what to do when things go bad.

Understanding the interdependencies of all of the components in the system and the support path for each is most important. You should expect an integrator who installs the system and takes responsibility for its support to proactively manage all aspects of the system, from validation of updates to installation of patches. Because of the system-wide implications of the DAM system, an integrator with strong domain expertise might turn out to be a better fit than a developer with limited experience with your particular domain. The same holds true for interoperability, user interface and automation developers.

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Since development of the DAM product will be continuous, you want to make sure the vendor will be around to support it or that you aren't left high and dry if its not. Your service level agreement (SLA) must

include recourse for both parties and will typically include an escrow agreement that defines what will happen if the company goes out of business and no one else develops or supports the product. Escrow means the code is held by a third party in up-to-date condition and released to assigned parties when triggered by a defined event. But many experts, including lawyers specializing in corporate law, consider escrow agreements to be false insurance that can be defeated without too much difficulty. In the end, escrow is part of a good faith arrangement where both parties believe that mutual success is the objective and the buyer is comforted by a history of stability and continued progress shown by the supplier. In other words, it's a matter of trust.

In every instance, the key to where to place that trust is based on due diligence. There is no more important resource than referral sites. Access to a successful referral site means access to a successful company-to-vendor partnership. A successful partnership means the parties weathered typical and sometimes extraordinary obstacles to accomplish their objectives.

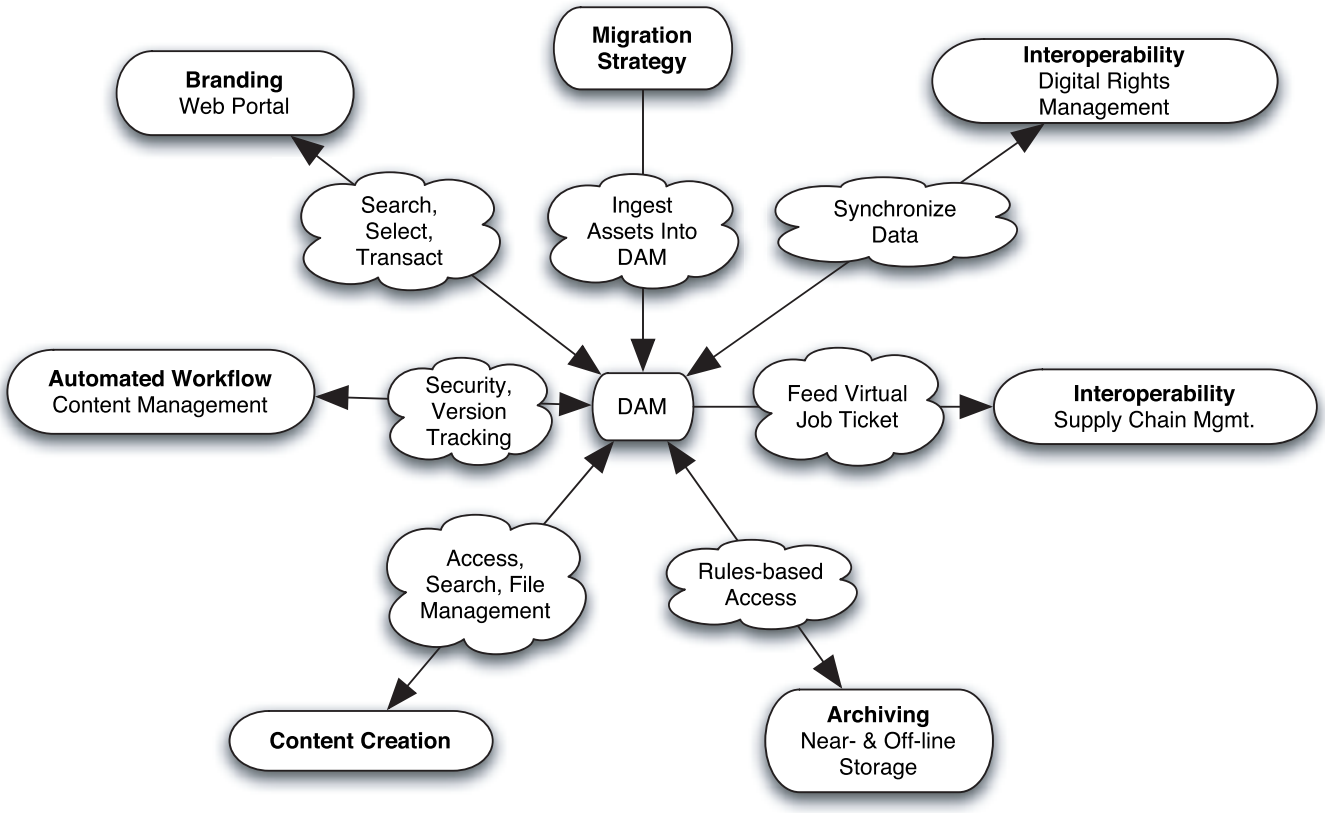
A vendor company's culture can provide clues about the standard of competence of the people you will deal with throughout the project, and intuition is important during due diligence. You should expect everything to go real well during the vendor selection honeymoon period before the knot is tied, but if you suspect a company seems insubstantial, it probably is. Similarly, a comment from a former customer that a particular project manager was great but "is no longer with the company" might be code for: "best of luck with the guys who are left." And if a customer can't comment on the system or vendor because of ongoing litigation, well…

DAM developers, independent consultants, integrators and in-house staff typically provide customization services. With most systems, the resources available are part of the same universe, and checking references or certifications is not difficult. Oracle DBA (database administrators) who had previously worked for Oracle might now work on Oracle installations or optimizations for an independent software vendor (ISV). Consultants with a particular domain expertise generally come from a system developer or integrator who caters to that industry. Matching up the players and their domain expertise with your needs is part of your due diligence. Stepping outside of this universe for reasons of price or expedience leaves you vulnerable to unpleasant consequences.

DAM Integration Services

Data Migration. Most organizations possess legacy data that must be imported into the new system. Customers are often surprised that it's possible to move existing

DAM System Customizations and Enhancements



data into the new system with complete parity. Of course, successfully moving the legacy data to the new system depends on a number of factors. First of all, the new system must be compatible with existing file formats. If not, some form of conversion will be necessary to update versions or file formats. This might mean upgrading QuarkXPress, converting files to PDFs for archiving, scanning files to a new DPI standard on an as-needed basis and so on. In most cases, this process can be automated with a conversion engine and some rules-based programming. Packaging archived files with all supporting files for storage and retrieval can be more complicated, although automation is still possible if the source of the linked files was logically organized originally.

Interoperability. Successfully integrating a DAM system into an existing workflow or enterprise will usually involve some degree of interface between the systems, whether it's between the DAM system and a content collaboration, job-tracking or rights management system, or a portal.

Interoperability is rarely available out of box, though most connections have been done before using rules, database-to-database calls, XML, Web services and other standards-based approaches.

Fortunately, most of this work is long past the pioneering stage and is typical fare for integrators and professional services organizations. Simply connecting systems is not enough in the case of a DAM, however. Data must be mapped from one system to the next, depending on the data type, and some level of synchronization must occur between the two. Due diligence in this case also recommends that you consult with a reference site for a similar installation, regardless of the implied simplicity of the connection.

Branding. In customer facing, revenue-generating situations, the DAM system must have a simple and attractive user interface. Wherever internal or external customers interact with the DAM system, searching its resources and making transactions to access them, the user interface is critical to the success of the project. In such situations, custom development linking the portal to the DAM, design and coding of custom user interface HTML "skins," or the creation of custom Java applets might be necessary.

Branding can also be important from a digital rights perspective. Protecting the rights and usage of intellectual property is a very fluid situation these days, with some companies embedding rights and usage information and/or watermarking the actual digital file. Watermarking can be done discretely or overtly, or it can be based on permissions. A generic solution supplied with a DAM system is unlikely to be satisfactory if the watermark scheme does not provide user controls and becomes part of the brand identity of the asset. Links to external rights management systems and the addition of watermarking plug-ins are generally optional extras. Customizing a system to embed rights data, include it in DAM system records and provide a user-controlled watermarking system is optional.

Data Integrity. Managing photographic images is a common use for DAM systems. The discussion around managing these files today centers on the digital master, which is generally a RAW file created in the camera and written without manipulation to the DAM system. This is similar to saving a chrome or negative in a box for subsequent scanning. An original file, such as a digital negative (DNG) or high-quality JPEG or TIFF, is kept as the master and not used as a working file. If this is important to your organization, you should require a formal check-in and checkout process as part of your DAM system.

This process can, when linked to a configurable file conversion engine, maintain digital integrity while providing re-purposed files for every media need. Some DAM systems will provide this functionality as part of the system, while others rely on the Adobe Graphics Server to do it. Originally called Altercast, the Adobe Graphics Server is very popular among system developers. It is usually a chargeable extra and, depending on the system, might require modest custom development to wire into the DAM system.

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Archiving. Like most of us, many small and large organizations don't spend enough time or money supporting a backup strategy or infrastructure. Perhaps the firmly entrenched DVD manual process or the 8-mm tape jukebox has lulled everyone into thinking that some system is in place and can be transferred to the new way of doing things. Unfortunately, this is rarely the case. Duplicating images for re-purposing, access to assets from the recent past for pickup work, and the unfortunate file bloat common to most content creation applications requires a strategy for storage and retrieval. This leads to the concept of server access network (SAN), online/near line/offline data access, and the custom programming required to link any of these to the DAM system. Settling on PDF as an archive format does not solve the problem; the same issues remain. DAM system developers will have some experience hooking their system to a back-end storage scheme and will have partner relationships with archive system and software vendors.

Automated Workflow. Automated publishing has been an elusive goal for many system developers. This is partly because it's nearly impossible to impose a cookie-cutter infrastructure on a workflow made up of hybrid components. And good luck getting all the vendors on the same page. This is especially true in environments where a DAM system is linked to production (as in a JDF-controlled workflow) or a job ticket enterprise solution. For most implementations, it is important to choose an attainable target and use what is available to achieve more modest automation goals.

In the prepress world, automation has often been achieved through scripting. This can continue for many using AppleScript (or Apple's new Automator functionality coming in Tiger) and Visual Basic. Similarly, in the DAM world, automation usually means triggers, rules and time-honored hot folders — a concept so old that it is almost embarrassing to acknowledge that it is still in use. Hot folders provide a virtual container for files that are watched by a program running in the background. Metadata used as a triggering mechanism for hot folders outside the DAM systems is becoming increasingly popular.

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Metadata Modeling. Metadata is becoming a crucial part of the infrastructure of a DAM system. It's so versatile that trying to describe it metaphorically doesn't do it justice and so ubiquitous in some DAM systems that using it well is key to a successful implementation of the system. Because metadata is so important, attention must be paid to developing a well-considered plan or model. Once the model is defined and developed, it should form the basis for a blueprint.

A metadata model is a three-dimensional representation of what is and what can be. Whether they realize it or not, every company is using metadata in the forms and values they use to identify product, staff, customer and job conditions. Building a model begins by collecting input from stakeholders, rationalizing the collection down to essentials, documenting the core set and describing how it must be used. For the most part, this is the record metadata: the information that characterizes the file and will populate the metadata records. Record metadata is job related and, for the most part, not as granular as the search metadata mentioned below.

Gathering information about workflow will also lead to another class of metadata, called business-process metadata. This must be included in the model along with the record metadata. Business process metadata triggers actions in the workflow mentioned in the workflow automation section.

Search metadata is the third major class of metadata and is closely tied to records metadata. It is more granular and for some customer-facing companies, the most important value added to the DAM system. Search metadata relies on controlled vocabularies: unique dictionaries and synonyms that characterize an asset far beyond what a file naming convention can do. Most companies have a simple, controlled vocabulary set that can be used to start the process, but they pale in comparison to the expansive sets being developed today for and by customers. Some companies hire specialists and librarians as the gatekeepers and managers of their controlled vocabularies. For some basic needs, it is possible to leverage existing controlled vocabularies as the starting point for your system. A third-party vendor can develop a custom vocabulary for your organization as an enhancement to the DAM system. However it is done, it will require some level of customization.

Once selected, a controlled vocabulary has to be integrated into the DAM system. The simplest way is to maintain the dictionaries and thesauri as an external resource and draw upon them through the DAM system. Metadata is organic and will grow to meet the ongoing requirements of the company or its customers. Managing a metadata file externally in an application and feeding a DAM system via a URL or some other linked list mechanism is a system customization.

Maintaining metadata vocabularies and a metadata blueprint is also important. Appointing a workgroup to watch over the status of a company's metadata should be done but rarely is. While this might seem like a silly requirement and not worth the effort, consider the value of metadata on the Web, where titling windows with appropriate metadata or using specific metadata embedded in text fields can make the difference between success and failure when measured in search engine hits. Start small but try to follow a blueprint for adding data to the vocabulary as it is needed. For a newspaper, data can be added as the result of emerging news stories. The image librarian, for example, can each day extract new words from publication and add them to the vocabulary, tagging it with consistent values from a controlled vocabulary.

Validation. One of the most overlooked aspects of data collection is validation. It's a commonly held premise that content creators will not enter metadata consistently or conscientiously. This means that the responsibility will fall to the systems administrators who capture and manage the files or to the portals that act as the gateways for this data. If this is true, it is most important for data to be validated against a company standard, such as a naming convention or controlled vocabulary. The only way to validate input is programmatically; attempting to do it manually if the quantity of files is great is a waste of time.

All databases do some form of basic data validation. This is usually limited to restricting text-to-text only

fields, integer-to-integer only fields, and Boolean-to-Boolean designated fields. Invalid data, primarily metadata, can come in the form of incorrect copyright or usage rights, improper or nonexistent job data, or incorrect and misspelled keywords. Challenging incorrect data based on controlled vocabularies or data formats is extremely important if the stored data is to have consistency and access to the data is to become intuitive.

Other forms of DAM field validation include designating fields as required (enter data in required fields before the file can be saved); designating fields as default (using a common, persistent value for a job or maintaining the previously entered value as a subsequent default); or matching synonyms for an entered value and validating it. Such methods ensure that this most important metadata information is entered properly so the system is consistent and behaves predictably.

Getting Help

The list of standard functions and customizable add-ons discussed in this article should give you an idea of some of the popular options available with a DAM system. Obviously, every installation will have its own challenges or unique requirements. Finding the resources to help you choose a system, support it, customize it, and define strategies for managing metadata, archives and workflow is a challenge. The internal company project lead is already managing the internal re-engineering and company buy-in for the system, and adding the new skills to handle all the implementation and customization that is required is asking too much to reasonably expect.

A lot will depend not just on who performs the customization and how it is executed, but also on how it is eventually supported. The service agreement discussed above will define the responsibilities of the service supplier and the customer. Attention to detail in this agreement is particularly important for customization. The customer's most important responsibility is to do due diligence on the supplier and survey former customers to find out about budget, timing and cost. Few projects go smoothly; they all have ebbs and flows, bumps to the timeline and budget. But the bottom line is whether the project is successful in meeting the needs of the company and whether it was rolled out successfully.

Luckily, services are available to support every layer of an implementation and provide ongoing support for it. The following breakdown describes a number of these alternatives. It's safe to say that today it is virtually impossible to sell a system without selling professional services to support it. An open and flexible system begs for a support group that knows how to best configure it. This is just one of many vital decisions that must be made. (A list of resources is at the end of this article.)

Multipractice Consultancies. Consultancies such as IBM, Accenture, EDS and Razorfish provide project management services to enterprises implementing digital asset and content management systems. They often act as lead consultant, watching over the interests of the customer when dealing with major implementations involving enterprise resource planning (ERP), customer relationship management (CRM) and DAM solutions. As in any construction project, virtual or otherwise, having a resource that coordinates the activities of all players, managing the timeline and costs, can be a major benefit. It is of no benefit if the roles of all of the players are not well defined from the start with an equally well-defined project lead. It is also not a complete win if the consultancy does not have a practice that specializes in your industry and has not had recent successes with the DAM solution you would like to implement.

Another option in the multipractice field is available from firms such as TATA, Infosys and Wipro. Some of the largest outsourcers of software development and support are broadening their menu of services with consulting, training and support for content and digital asset management systems. These services are available in the U.S. and represent a trend worth watching, especially in areas where intense application development is required to customize a core application.

Integrators and VARs. Integrators today are of necessity specialists in particular industries. They are generally small organizations and therefore can't cover all solutions outside of their areas of specialization. In most cases, they sell professional services in competition with system developers. They also glue together components from different manufacturers to create a domain-specific solution. While they might have preferences for a DAM solution vendor, they are generally flexible and more in tune with what is working in a particular vertical industry. This means the customer can have access to best-of-breed solutions that have been vetted by experts who have a vested interest in selling the solution and the professional services to adapt the solution to the customer's requirements, and staying up to date with technology or process improvements that emerge to support your industry. Integrators will often provide a broader perspective than a system developer because of their experience with a wider range of systems.

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Independent Workflow Consultants and Metadata Modelers. An independent consultant can advise your company on an appropriate system for your situation and

Resource Listings

The following listing of integrators and consultants runs the gamut from independent subject matter experts or domain specialists in large consulting firms. If your IT re-engineering project involves integration of content and asset management applications with enterprise resource planning (ERP), supply chain management or customer relationship management (CRM), you might benefit from the experience and best practices used by these multi-practice consulting firms. Most of them will still act as integrator and outsource the DAM or CMS piece of the solution.

If your installation will support multiple workgroups that reside outside the main enterprise infrastructure, the services from a vendor or integrator will be appropriate.

Independent Consultants

Ben Howell Davis
bend@ca.inter.net
902-521-7040

Bill Rosenblatt
GiantSteps Media Technology Strategies
www.giantstepsmts.com
212-956-1045

Marcus Technology
Irwin@marcustechnology.com
212-582-6811

Michael Moon
Gistics
www.gistics.com
510-450-9999

The Rockley Group
www.rockley.com
905-415-1885

Skiff Wager
Skiff.Wager@sewconsulting.net
865-560-9329

Enterprise Resources with Domain-specific Practices

Accenture
www.accenture.com
(312) 737-8842

Bearing Point
www.bearingpoint.com
(866) 276-4768

BGT Partners
www.burnww.net
(305) 438-1800

Capgemini
www.capgemini.com
(917) 934-8000

Computer Sciences Corp.
www.csc.com
(310) 615-0311

Deloitte
www.deloitte.com
(212) 489-1600

EDS
www.eds.com
(800) 566-9337

Fujitsu Consulting
www.fujitsu.com/us/services/consulting/
(732) 549-4100

Hewlett-Packard Company
www.hp.com
(650) 857-1501

IBM Global Services
www-1.ibm.com/services/us/index.wss
(888) 426-4968

Pomeroy
www.pomeroy.com
(800) 846-8727

Protiviti
www.protiviti.com
(713) 314-5003

RCM Technologies
www.rcmt.com
(856) 486-1777

SAIC
www.saic.com
(800) 430-7629

Schlumberger SEMA
www.sis.slb.com
(713) 513-2000

XML specialists with focus on content management

Isogen International
www.isogen.com
(800) 233-8393

Kontentsu
www.kontentsu.com
(613) 230-3765

LogicaCMG
www.logicacmg.com
(617) 476-8000

Software AG, Inc.
www.softwareagusa.com
(703) 860-5050

Print, Prepress, Publishing Experts

Carey DAM-IT
www.dambigidea.com
(800) 767-6071

Cohesion Inc.
www.cohesion.com
(978) 692-1177

DeepBridge
www.deepbridge.com
(212) 809-4050

DPCI
www.databasepublish.com
(212) 575-5609

E-Data Solutions, Inc.
www.e-datainc.com
(314) 446-1555

PCI
www.pcipage.com
(301) 762-2762

Video Specialists

Ascent Media
www.4mc.com

Onstream Media
www.onstreammedia.com
(954) 917-6655

P-Wave
www.p-wave.com
(610) 372-7890

Enterprise and Outsourcing Resources

Infosys
www.infosys.com
(510) 742-3000

Tata Consultancy Services
www.tcs.com

Wipro
www.wipro.com

Brand Management Integration Services

Seven Worldwide
www.sevenww.com
(212) 716-6600

Merge Agency
www.mergeagency.com
(404) 724-4942

Lifecycle Contract Management

Covigna
www.covigna.com
(650) 641-7950

Order Management
Comergent
www.comergent.com
(650) 232-6000

Government System Integrator

Trantech, Inc.
www.trantech-inc.com
(703) 671-9873

Mantech
www.mantech.com/ist/ist_default.asp
(703) 803-9115

Web to Database Specialists

Cybergroup, Inc.
www.cybergroup.com
(410) 455-5680

Xerox DocuShare Integration Services

Waterware Internet Services
www.waterware.com
(408) 225-5188

Criteria First
www.criteriafirst.com
(972) 492-4428

Xerox Global Services/Records Management
www.xerox.com

Document Management Specialists

BCS Systems
www.bcssys.com
(281) 596-9800

Google Content Management Consultant Directory

http://directory.google.com/Top/Computers/Software/Internet/Site_Management/Content_Management/Consultants/

provide services for some of your requirements. For example, a consultant might be able to guide you in the right direction for a system, work up a metadata model for your industry, help screen integrators and service providers, and so on. It can be a great way to cut to the chase and filter out a lot of the noise and to get superior advice on current metadata practices. As with any other decision discussed here, due diligence is important to make sure the person you engage is compatible and appropriate to the task.

System Developer's Professional Services. System developers provide professional services to support their systems. The range of support services can cover all of the customizations mentioned above and more. Like the integrator mentioned previously, a system developer will often have a greater presence in some industries than others. This will be evident from the emphasis on security issues, integration of domain-specific metadata schema, and other workflow control and reporting approaches. With regard to integrating with third-party applications, system developers generally go through a certification process before accepting an outside application into their solution. An integrator by the very nature of its size and flexibility will be more accepting of molding the system to the customer's needs in such cases.

Our Take. Implementing a DAM system involves at the very least two parallel project efforts. The customer's internal effort to manage the process of re-engineering its workflow and the system developer's efforts to install, customize and support the system. Few installations don't involve customization, and customization will affect the timeline and cost. Customization will also be the linchpin to a streamlined and friendly environment that results in a successful process re-engineering.

Most customers will outsource customization services. The choices are simple: system supplier, integrator or consultant. The system supplier can usually provide for all of your needs as they relate to functionality of the system itself. System developers with deep domain expertise in a particular industry can often provide broader support than one that depends on the industry. Integrators will also be specialists, with domain expertise often greater than that of the system developers. They are very flexible and more likely to glue together a solution from a variety of components to suit a particular industry than a system developer will be.

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Independent consultants can provide domain expertise and support for the initial filtering and buying decision. They can also help set up the project management methodology, build a business case, and help document existing workflows and metadata. Specialists in metadata modeling, custom programming or automation scripting can later on provide ongoing support and advice regardless of the system selected. **TSR**

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