

THE SEYBOLD

REPORT

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Serving Assets à la Carte for Web and Print

By Ron Roszkiewicz

The fundamental graphic arts workflow question has always been whether to buy or build a system. While turnkey systems are making a comeback, for most, the choice is between building a little or building a lot. It comes down to the amount of coding or professional services that are engaged to support the additional value customers want to add. Most developers try to anticipate the functionality that will be needed and build it into the solution. Others focus only on what they are good at and include hooks for others to connect. Recently we discovered two developers that built their solutions from scratch after years of experience developing solutions using existing tools on a case-by-case basis.

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Digital Print Is Growing, but Is It Good for Printers?

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As print on demand matures, its potential becomes more apparent, as do its limitations.

Mark Bide: ACAP Pushes Forward

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We recently asked Automated Content Access Protocol Coordinator Mark Bide for the latest developments regarding the protocol.

Making Digital Pay

By L. Carol Christopher

Ways to Digital Profit, the third session at Ifra's Beyond the Printed Word conference in November, featured four speakers from around the world discussing the vital topic of profiting online. Hooi Chong Ooi, general manager of Chew Media Corp. of Malaysia, addressed the topic of ad models on news sites. Melinda Gipson of GateHouse Media, discussed agents of change: finding and funding next-generation Web resources and building Web 2.0 relationships to last. Mark Lawlor of Independent Digital talked about how his group engages with advertising agencies. Breaking the digital ground was the fourth topic of the session, presented by Liisa Kotilainen of Sanoma Digital Media House.

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Yahoo Rebuffs Microsoft for Now

By Molly Joss

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It took Yahoo Inc.'s board of directors a little more than a week to rebuff Microsoft's Feb. 1 offer to buy the company for \$31 a share, a deal worth approximately \$44.6 billion. However, the board did not slam the door shut on the offer completely.

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Serving Assets à la Carte for Web and Print

By Ron Roszkiewicz

New CMS solutions from VYRE and DAM offerings from Adam Software will enter the US market this year, with a plethora of configurable options. Will US content publishers accept their à la Carte approach to web building and automated print?

The fundamental graphic arts workflow question has always been whether to buy or build a system. Lately, however, this black-and-white premise has fundamentally changed. While turnkey systems are making a comeback in some areas, for most the decision is between building a little and building a lot. It comes down to the amount of coding or professional services that are engaged to support the added value customers want to add. The price can be considerable and can double the total cost of buying a stock system. For some, the issues are related to sophisticated and automated workflows integrating print and web, for others linking graphic arts workflow elements with legacy back office systems.

Most developers try to anticipate the functionality needed and build it into the solution. Others focus only on what they are good at and include hooks for others to connect. In the best cases workflow components developed for one customer can be resold as an off-the-shelf component. This is historically difficult for developers with legacy products using legacy code to achieve. Recently we discovered two developers who built their solutions from scratch after years of experience developing solutions using existing tools on a case-by-case basis. The results are architectures constructed of core engines and servers, Lego-like snap together components using licensed and custom-built applications and applets that conform to accepted open source standards and practices.

Two companies in particular, **Vyre Ltd** and **Adam Software** exemplify this approach. Both have built their solutions on top of engines (often simply called servers). Both companies rely on modern programming with XML, Java and Ajax. Both offer their system components a la carte. The first company, Vyre, has been around since 1998. Through a merger of a UK and an Icelandic company, Vyre joined together developers skilled in web design and related technologies, rich media, metadata and data transformation. Their flagship product Unify, features self-described modules including: digital asset management, document management, eCommerce, online content management, PDF templating and survey and analysis reporting. While they are first class in support for traditional marketing and publishing support, their unique expertise has from the start

been in storing, tagging and distributing video. Vyre is planning to bring this system to the US in 2008.

Adam Software is based in Belgium and since 2001 has focused on developing a digital asset management based solution. They are also planning to enter the US market this year and are currently developing partnerships. Its solutions are also deconstructed architecturally so different components can be plugged into others to support the intent of the system. Adam is an acronym for Active Digital Asset Management. In some ways this is where it differs from Vyre, a self-proclaimed *content management* system vendor. The differences between similar components can be subtle between the vendors. The similarities are also sometimes hidden from view. For example, one of the key components of the system is the InDesign Server engine. Adam uses this engine to automate a template driven publishing system. Assets are transformed, tracked and formatted to match the needs of the document. Less focus is placed on metadata and search.

In the case of Vyre, they also use the InDesign Server engine but less to support customer-facing automated design applications. A lot more effort has been placed on browser-based search and it is one of the main characteristics of their user interface. Metadata used to support search, is dealt with taxonomically and hierarchically. Some schema such as the IPTC, Dublin Core are built in to Unify. In the Vyre system read and write permissions determine the level of access to the design elements, metadata hierarchy and content definition. With Vyre the focus is on XML-wrapped content that is described in XSL.

Determining which of the two solutions to use is dependent on the following criteria:

- How the content publisher intends to use and reuse content,
- Which development environment provides the tools needed to control the presentation without outside help,
- Which solution supports the company's media types (where Vyre might have an edge for some customers because of its expertise in handling video), and other file support criteria.

It's an XML World After All

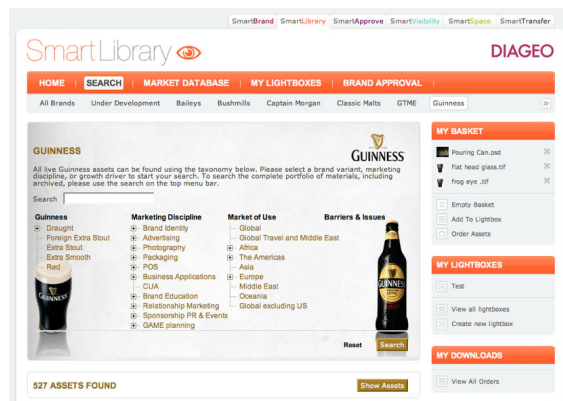
In the past a software publisher would develop a solution and package it in a tidy little box or build one

component well and leave it for integrators to glue with other components. Vyre and Adam represent a new breed of developer who after spending years solving problems for customers with content for web and print, took the bold step of synthesizing their experience into solutions built on architectures that allowed them to use best of breed development tools and practices. The result is that they have added many layers of value around the basic repository and provide a logical blend of custom, licensed and open source based applications that represent the next generation of hybrid system. Without legacy code the applications are free of kludges and workarounds that weigh down long in the tooth systems. This leads to better performance and enhanced, modern user experiences.

The Vyre Unify Content Management System is a solution that emerged out of a need by creative agencies in London for a more flexible application to build dynamic web-based digital asset management systems. Around four years ago they decided to write what was to become Unify from scratch. Today Vyre is a 35-person company that is growing by 60% per year. Their sales are mostly in Scandinavia and Europe, but they plan to introduce Unify to the US this year. Some of their key accounts include Diageo, Woolworth and Virgin Vacations.

In keeping with a content management and web focus, Vyre provides a comprehensive suite of tools for multi-purposing content. As for the repository that holds the assets, it can be Oracle, Notes or MySQL, it is merely a container wrapped with enabling technologies that route or transform the asset depending on the need at hand. The bottom line is that although positioning Unify as a modern content management system, and de-emphasizing digital asset management, Vyre is still holding true to its multimedia mission. Their expertise with video is supported and is crucial to their forward-looking customers. They even provide transformation software to convert video for YouTube. Their development efforts in the video area combine licensed as well as built from scratch codecs. They support MPEG2 and MPEG4.

To support traditional content management requirements, Vyre supplies the Digital Asset Processing Server (DAPS). In this server, which itself sits alongside other servers in the system, text files are stored as XML. Formatting specifications are stored as XSL. To automate the publishing using this XML text, Vyre provides a combination of logic and business processes provided by in-house, licensed and open sources. For instances where publishing will be automated, Vyre uses the InDesign Server engine. As with most InDesign Server implementations, pre-designed templates are populated with XML. Providing tools for multimedia is important to Vyre but they clearly have put their effort into developing tools that allow access to content from the web rather than from a traditional print layout paradigm. In this case Adam's Software's tools for automating template-based publishing are far more complete and highlight their software suite.



Vyre browser search results with example of hierarchical metadata access

At the core of Unify is the content repository. Vyre supports standard database queries so Oracle and MySQL can be used. In the context of the overall system structure the database layer is pretty thin. A separate search function is used and the system does not depend on database queries. The applications are heavily dependent on Java. This makes the system platform neutral and it will support Unix, Linux and Windows. The core content repository supports content that is structured. There is another repository for unstructured data.

Of course the structure of repositories and databases may matter to developers and integrators, but as far as users and integrators are concerned the critical issues typically involve system administration and the flexibility of user interface design tools.

Graphical Portlet Builder

Both companies to varying degrees fit a model of application development known as rapid application development or RAD. RAD applications provide tools, often graphical in nature, to design quite complex web sites. The code necessary to manage the customer facing functionality and interact with other system components are entered automatically. In web-savvy systems the presentation layer is the browser interface that is used day-to-day. The technology developed by Vyre treats the portal as a container for holding elements called portlets. This approach, originally developed by IBM, is how Vyre supports users building web modules. To achieve this level of graphical user interface building, they identified the most commonly used design and interactivity elements and turned them into portlets. Portlets make mocking up web designs and subsequent refinements quick and it greatly simplifies the addition of forms. The use of portlets greatly simplifies the rapid deployment of sites without compromising on the power needed for search and scalability. Portlets comply with the **JSR 168 Portlet standard**. This standard is a product of the Community Development of Java Technology Specifications. Since portlets are an open standard web developers can use portlets outside of those supplied by Vyre as part of its standard toolkit.

Portlets can even be used to set up an ecommerce process on the site. Even though Vyre does not specialize in tools for developing merchant accounts, customers do use the ecommerce workflow for allowing users

to aggregate images for example before downloading them. Since portlets are provided as part of the Unify toolkit, there are no extra charges for them.

Metadata

Metadata is very important to Vyre and they go extra steps in supporting schema and using metadata to control workflows created with Unify. Vyre believes that because of their reliance on metadata for their separate search function, the system can be deployed to millions of items easily. This is compared to a query based database heavy system. To support their use of metadata they created the Unify Metadata Exchange Format six months ago. They also claim to read and write XMP metadata although no mention is made of the fact on their web site or in their literature.

Vyre also uses taxonomies to control what users see. It is the granularity of the metadata that enables the granularity of the search access. The metadata assigned to files is stored in a separate file, a sidecar that is linked to the asset in the system. This metadata can be embedded in the file when it is exported.

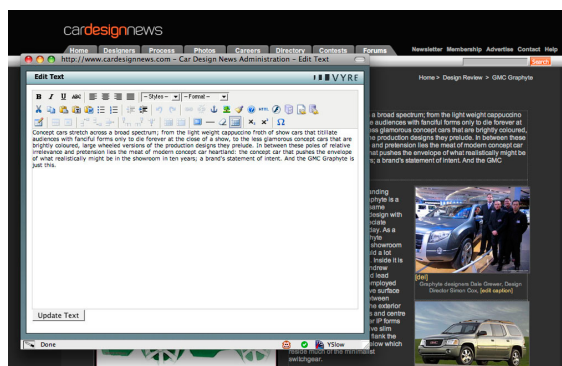
Implementation

Implementing a portal takes between 3-4 months on average, six months for a large installation. The system is very adaptable. For the Woolworth's installation Unify replaced a whole menu of supporting applications that were built on top of an SAP repository. In this installation applications such as Excel, Access and Outlook were used for storage, database and messaging. Each of these separate applications/functions was turned into tabs on the Unify web interface.

Vyre Unify Products

The Vyre menu of product, or modules in Vyre-speak, includes Digital Asset Management, Document Management, e-commerce, Online Content Management, PDF Templating and Survey and Analysis. Each of these modules is used in the service of **web-based content management**. The web focus is reflected in the highly evolved tools for web design and metadata management. They were clearly designed differently than if they were intended to serve print. Other areas of focus are on web-based database driven forms with WYSIWYG editors. Edited content can be routed around for review and approval. To reiterate an earlier description of Vyre's use of metadata, search, access (user read/write permissions), and control over the content and look and feel of the site, are determined through the use of metadata and the user's access to it.

Taxonomy system. This expanded use of a user configurable metadata taxonomy system is an improvement over most content management solutions. It provides for easy day-to-day maintenance and is configurable to suit the needs of the user. Definitely more highly evolved than the one size fits all or the inaccessible system where expensive professionals are required to make



Vyre browser-based text editing user interface

even the slightest change. The reason for providing such levels of flexibility is because multi-national European companies must manage the same products, SKUs, in different languages. Localization is very important and must be reflected in the underlying metadata. Vyre puts this control in the hands of the end user.

Audit trail. Vyre includes reporting functions for analysis and system monitoring. Such capabilities are rare in content and asset management systems. Sophisticated DAM systems have monitoring and reporting modules and find that in the early days of system adoption it aids in monitoring how the system is being accepted and later on helps determine the efficiency of the system. Of course because this reporting module also tracks items like number of views it can be used as a marketing tool for determining the effectiveness of product placement. The audit trail also tracks the version of elements on the system so the site itself can be checked for accuracy and timeliness.

Search. Unify uses the **Jakarta Lucene** open source search engine and supports keyword searches, Boolean searching, fuzzy searches and proximity searches. Users can control searching through the metadata added to the system. The result is powerful full text searching which extends control over asset access to a contextual level.

Authentication and authorization library. Vyre has developed its own library for single sign on. This is important because hybrid systems can complicate day-to-day usage for users by forcing sign on (or login) for access to individual modules. Unify comes with: database mapping, LDAP (lightweight directory access protocol) and JAAS (Java authentication and authorization service). LDAP and JAAS essentially bring to networking protocols what the telephone directories brought to phone services – an easy way to organize and manage user names and contact information.

Output. Vyre supports PDF for output to web or print. The process is essentially based on XML stored content flowed into PDF templates that are stored as XSL FO style sheets and generate the conversion that creates the PDF for printer output.

Adam Software

ADAM Software specializes in the development of asset management and media supply chain workflow

components. Originally, they were a graphic arts supplier and prepress service. Adam decided to make a change in 1999 and to rebuild their software from scratch between versions 2 and 3. Part of that development included creating architecture to support the interlocking components. In addition, they decided to build on top of a new development environment, Microsoft .NET.

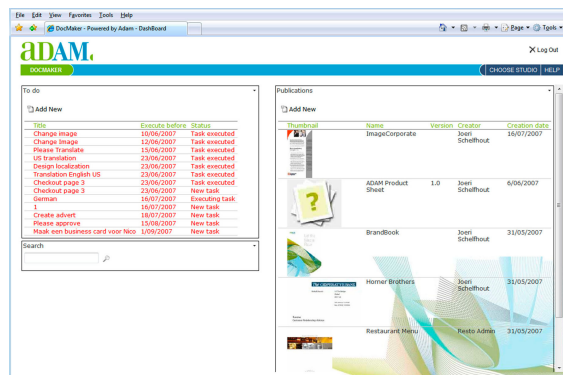
Their graphic arts and prepress experience spans 15 years together with numerous European partners. In contrast to the Vyre system, Adam's mission is to integrate into the media or marketing supply chain. They are focused on preparing content for print through automation. Their mission to simplify operations for the end-user by providing template driven designs and point-and-click user interfaces is similar to Vyre's. Adam's focus on print is extended to packaging, cataloging and brand management workflows among other print market segments. Since Adam must support applications that are used to create content, they cannot rely solely on their web-based solutions. They must be accessible from within the user's comfort zones, a term that means in this case the graphic arts applications users are familiar with using.

Vyre's elegantly simple Java tools also offer a stark comparison to the necessarily messy mix of technologies that are required to support the hybrid environments Adam's partners are faced with each and every day. Legacy systems and upstream desktop applications have to fit one way or the other into the supply chain as they pull assets from repositories. Managing, tracking, tagging, transforming and distributing them to whatever devices request them require numerous unique approaches. This is not to imply that Adam cannot serve as a backend to a browser-based asset server. The realities are that supporting packaging, directory publishers, magazines and other print producers require additional intelligence and science than print to screen for the web does.

Adam's approach is to provide the tools and hooks for integrators to build with. As mentioned earlier, Adam is built using .Net from Microsoft. Adam Software also supplies an open API scalable to support enterprise-sized installations. The resulting user interfaces can be elegant. Of course, support is also provided to Microsoft Sharepoint and Microsoft Office just as it is to Creative Suite applications.

A Solid Core

Adam's system core is comprised of a Microsoft SQL-based database and a file server. Layered on top of this core is the Adam Software Engine. This layer developed with .Net is supplied with a well-documented API. The idea is that other developers can then use these APIs to develop applications, called Studios by Adam, that provide web interfaces into the file manager and asset database. Adam provides pre-built interface templates with the stock studios. The main studios supplied as part of the Adam Studios Model include: the Asset Studio, the Config Studio, Docmaker Studio, Product Information Management Studio and Workflow Studio.



Adam Software
DocMaker asset editing
interface

The point of the Adam Studios model, to repeat an earlier characterization is creating a media asset supply chain. While studios act independently to support management, distribution or labeling for example, they also interact for purposes of tracking and reporting and especially for system automation. Besides end user transparency, automation is a key feature of the Adam system. This is another differentiating characteristic of the Adam System and the Vyre System.

As far as development environments are concerned both Vyre and Adam use development environments that represent state-of-the-art for multi-media web and print content delivery. Both companies provide platforms for creating added value. The focus on print as the product of the media supply chain they support is perhaps the greatest differentiating factor between their handling of digital assets.

The Action Upstream – Application Connectors

Of course no digital asset company has ever been able to support the print publishing industry without supporting the commonly used applications of the content creators upstream. It's a nasty business but one that has been made easier, at least by Adobe, with the introduction of Version Cue. Adam has created a Version Cue Connector that provides the essential link into the Creative Suite. This transparent link between creative applications and asset repository is meant to be transparent. It's also meant to allow the users to remain in their application "comfort zone" when accessing their assets. Using this approach, they can access assets while in InDesign and Photoshop comfort zones. The Version Cue Connector links to the ADAM Asset Studio as one central media repository, which can store any media type, and also allow Adobe Bridge to appear as a component in their workflow. The ADAM Asset Studio is accessed via a web interface. The InDesign Connector brings automation and semi-automation to numerous page building and design processes, stores native templates and tightly integrates with ADAM's project management and workflow studios. Of particular importance, is the ability to create multi-lingual variants and specify rules for automatic resizing of content boxes, an extremely important capability in the European

market they currently serve. But that's not all. Adam Software recognizes that media assets may be created and consumed by users in sales and marketing who also want to manage their assets on the central repository. Therefore, to help them manage for example, their PowerPoint slides and slide elements, Adam provides a Microsoft Office and SharePoint Connectors. These are sophisticated managed connectors and users access rights are managed through the Config Studio. One last connector worth mentioning is the Kodak Smart Review System Connector (formerly RealTimeProof). This connector is intended for OEM installations of online collaboration and soft proofing.

Connectors are supported by business rules that trigger the built-in transformation engine. When assets are requested from the repository, they are transformed to the appropriate bit-depth, color space and resolution depending on the access level of the user and the intended use of the asset.

Product Information Management

Efficient management of the supply chain is dependent on product information. Product information is stored in database records and known today as metadata. Each installation is represented by its own unique schema. Companies identify a key employee responsible for managing the tagging of products described in the schema and it is controlled by that person. Adam Software's notion of metadata, a term not mentioned on their site or in their literature, is based on their definition of Adam Records. Adam records consist of three parts:

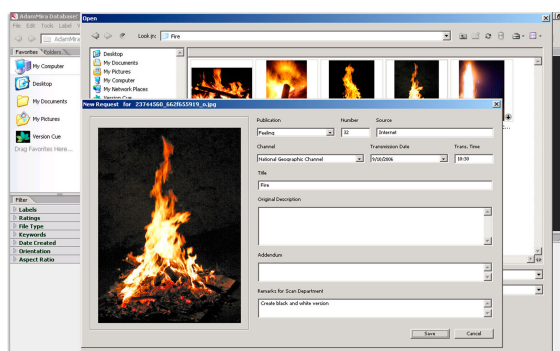
Classification. Assets can be listed in one or more taxonomies. Unlimited as far as the Adam system is concerned.

Attributes, or in metadata terms the schema, can be file dependent, user dependent and classification dependent. They can also be defined as part of a global set.

Files can contain information in Adam Records. The records can files attached to them with single or multiple pages and different versions. Files in a record can be of different types. Files can also be of the same type as in a photo shoot where all of the images are tagged with the same basic metadata in the same record. There are no limitations on the languages of the file.

In addition to this flexible use of the record concept, Adam Records also supports tracking of how content is used creating a very powerful search function. For example, the relationships between records are tracked automatically. Since PDFs, QuarkXPress documents, InDesign documents, and PowerPoint presentations can be attached to records, the Adam DAM can keep track of the images used in jobs for simple search and retrieval or for managing the usage of intellectual property. In addition to tracking, links can be made between the attributes of records. This is necessary when the need to display accessories along with the main item is required in an online product catalog.

Workflow and Config Studio are two tools for managing the workflow of all of the other connectors and Studios



Adam metadata attributes form and link to Adobe Bridge

as well as the level to which users interact with them. The Workflow Studio defines the business processes including tasks, processes, templates and configurations (delegations). These can be graphically represented in Visio and are easy to setup and reconfigure. The Workflow Studio defines manual, automated and semi-automated activities that may take place in the other studios.

The Config Studio is for managing user accounts and the security of the system. To a degree the Config Studio works hand in hand with the Workflow Studio as assets are made available to users for certain tasks or routed to them for some action or other.

Conclusions

We don't expect there to be any resistance to systems based on Java for web-based content and .NET for print-based content delivery. Both development environments are mature and popular with integrators. The components provided in both systems should also be welcome and seem to support the customization that will be required for each customer's needs. There may be some resistance in cases where a legacy server will be replaced by the new system or the change to a new workflow may seem too disruptive.

Both developers expose the metadata structure and supporting multiple schemas to users and that may be a big win for users since that is the reality of their world. Schemas are living documents and their content change with time. Being able to determine a metadata destiny without continually engaging outside help is a cost and time saving. We expect that the importance of getting started on the right foot with a metadata schema and strategy by way of outside support will continue to be a smart course of action.

Neither of these systems is in any way turnkey. Where they can however they do supply stock templates, rules and widgets like portlets. They are both intended for partners and integrators to configure to the customer's needs and provide the subsequent training and support. In that sense what both systems represent are two development platforms each with a comprehensive suite of toolkits, metadata strategies, business process controls and presentation design applications. Such advances are all-powerful contributions to the evolution of intellectual property management.

TSR