RELEASE 1.0

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THE WEB GOES INTO SYNDICATION
By Kevin Werbach

The shape of content and business relationships on the Web is tied to an old concept. Syndication, drawn from the closed world of traditional media, may be the model that allows the Web to remain open as it grows.

As with any new medium, the Net incorporates elements of media that came before. From Oprah to Dilbert, syndication deals are the lifeblood of today's broadcasting, cable and newspaper industries. In such arrangements, entities that create content license it out to distributors who integrate it with their own and other offerings. Several major Web-based companies adopted the syndication approach early on, though the market has remained fairly limited.

Online syndication is now poised to explode. But even as it changes the Net, the Net will change syndication. On the Web, the concept applies to commerce as well as content, and soon it will extend to dynamic applications. Syndication will evolve into the core model for the Internet economy, allowing businesses and individuals to retain control over their online personae while enjoying the benefits of massive scale and scope.

The Net is a communications medium, a platform for commerce and a distributed computing environment, all at once. Many distinct consequences flow from the choice of metaphors (see **Release 1.0**, 4-97 on metaphors and the Net). If we view the Net as a public library rather than a shopping mall, for example, we'll think differently about issues such as content filtering, privacy and the role of advertising.

Far less appreciated are the points of commonality across different metaphors. Syndication uniquely cuts across the idioms of content, commerce and computing. Though usually seen as an artifact of traditional passive media, syndication fits perfectly with the Web's fluidity and interactivity.

The foundations for pervasive Web-based syndication are now being laid, =====>

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INSIDE

but everyone is still trying to figure out just what the structures on top will look like. Software vendors, service bureaus, content creators, interactive agencies and merchants are jockeying to define the models for syndication networks. Battles are being fought in both standards bodies and discrete marketplaces. Whether they realize it or not, all the players are groping around a deep but under-appreciated Internet challenge: distributed information management.

Let's make a deal: A crash course on offline syndication

In the earliest days of television, sponsors created programming themselves and bought airtime on networks. Soap operas got their name because they were produced by sponsors such as Procter & Gamble. They changed our culture and created some of the first mass-market brands.

Over time the number of studios creating programming grew, as did local stations needing content to fill their airtime. Syndication pioneers such as NBC's Bob Blackmore (now chairman of StudioOne, described on page 14) drove from station to station with canisters of 16-millimeter film. Networks and Hollywood studios now routinely syndicate re-runs of their programming to local TV stations and cable networks. Viewers see the syndicated content on their favorite stations side-by-side with locally-produced programming. Successful shows now make significantly more in syndicated re-runs than they do the first time around.

Stations pay for content with two forms of currency: cash and ad time. For example, the A&E cable network might pay the Universal studio a fee to air episodes of *The Equalizer* over four years, and might also "barter" to Universal the right to sell some of the advertising slots when the program airs.

Syndication is also used for first-run programming. Companies such as King World have major businesses producing and distributing syndicated programs such as *Wheel of Fortune*. These are typically pure barter deals: The syndicator provides the programming for free, but retains a significant chunk of advertising slots. The syndicator can pass along that time to sponsors who underwrote its production costs or can sell the space to unaffiliated advertisers. The station controls the remaining ad time, thus generating revenue with no up-front costs.

Syndication is also at the heart of the newspaper industry. Newswires such as AP and Reuters offer stories to thousands of publications. More "unique" content such as cartoons and opinion columns is also routinely syndicated. Content creators in print typically must sign exclusive deals with syndicators, but publications select content from several sources. In print as well as broadcasting, there is a spectrum from distributors that only run original programming to those that combine original and syndicated material to the ones that buy all their content. Players such as *The New York Times* fill two roles: running original stories and syndicating content to smaller outlets.

In this issue we examine the companies illuminating the possibilities for ubiquitous syndication on the Net. Vignette, ShiftKey, UserLand and Netscape are developing technologies to manage syndication relationships and to move information efficiently between sites. iSyndicate and StudioOne are creating repositories of syndicatable content. Affinia, LinkShare and Be Free are building intermediaries to expand syndicated commerce. Allaire and VerticalOne are extending syndication to dynamic content and applications. While they're at it, these companies expect to create the successor to the word processor and a new set of economic arrangements touching almost every site on the Net.

Syndication and the Web

Up to now Web syndication technologies and practices haven't generated much attention outside narrow communities of interest. But soon, syndication will be absolutely central to the development of most Net businesses. At the same time, it's the future model for the millions of independent and personal Websites that give the Net its vitality. The Net is getting so big that no one can be everywhere. Syndication allows sites to extend their presence out to their customers, and gives those customers tools to aggregate the information and functions they wish to see.

Syndication works so well online because everything takes the form of information. In the physical world, syndication involves a lot of printing, assembling and driving video reels around. On the Web, as the transfer of content becomes simpler, the relationships can become more complex. Add to that the ability to assemble information dynamically or even to execute applications with rights and privileges assigned among various parties, and things start to get interesting.

There is no hard boundary between online content and outputs of Web-based applications; in some sense, the issue is only when the content is "fixed" — in a studio, the same for everyone; somewhere intermediate, "repurposed" in the design/development department of a Web outfit; or at the last moment, when Al sees it in one form on his screen and Ethel sees a different instantiation on hers, based on their personal profiles. In fact, the ultimate content may not be on the screen, but delivered the next day as a pair of custom-fitted Levis jeans. Syndication models that offline are limited to broadcasters and newspapers therefore can extend to retail transactions and even core business processes on the Net.

Let's say you're a fencing aficionado looking for a new epée. You can search for a good online sporting goods site, or potentially even a fencing equipment retailer. Or you can go to the fencing vertical site you frequent anyway, read through reviews of equipment and merchants written by people you trust, see pictures and specifications imported from an e-commerce site, then click through directly to the order page on a retailer's site. The e-merchant pays a commission to the fencing site, and everyone goes home happy. (See pages 19-25 below for more detail on such e-commerce affiliate programs.)

Of course, the Web was created to facilitate two-way information exchange (originally research papers in high-energy physics). Hence, existing Web tools and protocols don't support all the elements necessary for effective multilateral syndication. Web syndication began to gain traction in 1996

thanks to portals and interactive agencies such as SiteSpecific. But the pre-conditions for it to become pervasive haven't existed until recently.

The syndication model

Syndication always involves four layers: originators, syndicators, distributors and consumers (see figure 1). One entity may play several roles, and there may be other intermediaries such as advertising networks and rights-management clearinghouses involved, but the basic model remains consistent across a surprising range of industries (see figure 2).

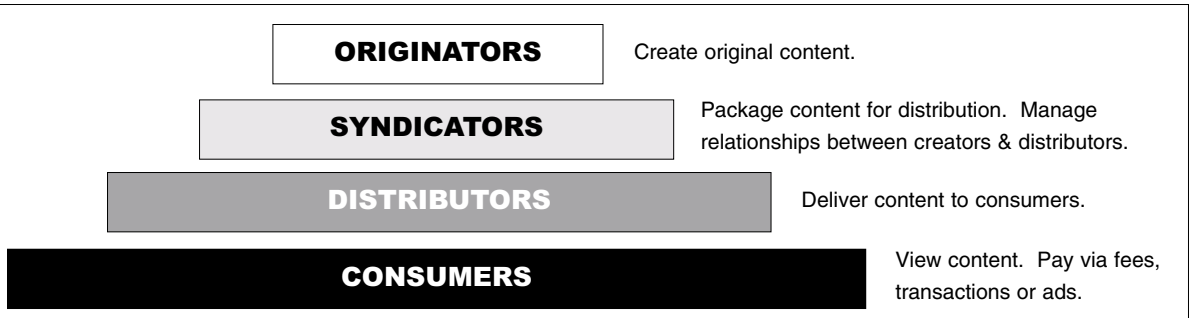


Figure 1 — The basic four-layer syndication model.

Originators are the creators of content and the fulfillment points of transactions. Without syndication, they must reach and interact with consumers directly. Syndicators manage the transformation and distribution of information between originators and distributors. Syndicators can provide software (generally operated by content originators) or they can offer services (in which case they serve as an independent intermediary). Distributors, otherwise known as aggregators, subscribers, resellers or affiliates, display syndicated information to their customers and interact with them on behalf of the originator. Consumers benefit from the reach and flexibility of syndication networks, and in return they prime the system by paying money or viewing advertisements.

Syndication can take place whenever there are multiple distributors in a market. It is especially prevalent in situations where there are many distributors and also many originators. As the number of potential relationships grows exponentially, formal bilateral contracts following the electronic data interchange (EDI) model become untenable as a broad-based business model (though some bilateral agreements will persist).

The essence of the Net is openness and the theoretical ability for anyone to have a relationship with anyone else. Syndication is a means of making that theoretical ability practical: It fosters the "mass-production" of customized, one-to-one relationships, by defining and implementing the terms under which originators and distributors interact with each other and with consumers.

The value of syndication

Syndication provides several benefits. Fundamentally, it facilitates functional specialization and diversity. Without syndication, any content originator must also find a way to distribute that content to end users,

or must establish an exclusive relationship with a content distributor. On the other end of the spectrum, destination sites and eyeball aggregators must invest the time and money to generate high-quality original content. Calling this disintermediation doesn't necessarily mean it works for companies or their customers. Some intermediaries add friction, but others make the market more fluid and efficient. In a syndicated world, companies and individuals can choose where they wish to concentrate their effort. The result is a rich ecosystem with many potentially profitable niches (see figure 3).

From a business perspective, syndication allows originators and syndicators to aggregate a large number of small-value transactions into profitable businesses. Content originators can generate incremental revenue (either from subscription fees or from advertising) with little or no additional cost by syndicating materials across a larger number of sites. Syndication allows originators to expand their reach and speed their time-to-market, both critical elements for success in a Web business. It also makes it possible for smaller, less commercially-oriented sites to share the benefits of the Internet economy.

Offline (print, radio, TV)	Web content	Consumer e-commerce	Applications
Authors and producers (TV studios, news wires, cartoonists, columnists)	**Content originators** (news feeds, stock quotes, directories, CNet, Time-Warner)	**Merchants** (Amazon.com, CDNow, Beyond.com)	**Transaction originators** (banks, retailers, enterprise apps)
Syndicators (King World, United Feature Syndicate)	**Syndicators** (iSyndicate, StudioOne, Infospace)	**Affiliate managers** (Amazon.com, Affinia, Be Free, LinkShare)	**Syndicators** (VerticalOne, Corio, USinternetworking)
Channels (broadcast and cable networks, newspapers)	**Portals** (Yahoo!, iVillage, CNet)	**Affiliates** (content sites, portals, personal pages)	**Destination sites** (E*Trade, Office.com, Amazon.com)
Viewers	**Internet users**	**Consumers**	Users, businesses

Figure 2 -- Roles and examples of service providers in syndication networks

Scaling, scarcity and syndication

The evolution of online syndication, like virtually any other major Internet development, is tied to two factors: scaling and scarcity. Web-based services must be able to support massive and rapidly increasing scale, because even the most isolated bit of information is potentially available to an audience of tens of millions. Scaling is complicated by the profusion of alternatives at every level of the value chain. A player at any point must interact with dozens or even hundreds of other players beyond his or her direct control. (For a discussion of scaling challenges in the Internet's core infrastructure, see **Release 1.0**, 6-98.)

The constraint on scaling is scarcity. A system can only grow as fast as its weakest link. The Net scales so rapidly because it eliminates elements of scarcity in the physical world, such as the time and expense of

delivering information to customers. Before the Web, scarcities of time or money bounded market segments — Borders Books added music to its stores but not auctions or groceries. Web businesses that hit scarcities of infrastructure or talent tend to crash. Scarcity can also be created artificially by companies looking to extract monopoly rents (such as the broadband access providers described in **Release 1.0**, 2-99).

The business models for offline syndication assume scarcity at various points. Content originators in print and broadcasting typically sign exclusive deals with syndicators, and those syndicators have only a limited number of outlets (TV channels, radio stations, daily newspapers, etc.) to distribute content. The Net removes those points of scarcity. Players may try to re-impose it by gaining sufficient market power over a particular link in the chain. If they fail (and we believe ultimately they will), we'll be in uncharted waters. Not only will the Web have no center, but every individual site will potentially be a mini-Web of tightly integrated resources from multiple sources.

Order emerging from chaos

Put another way, syndication networks are a form of emergent order. There is an overwhelming volume of information on the Web, so much so that consumers can't possibly find for themselves all the content creators and originating merchants that might interest them. Complicating this situation, the boundaries between sites and content types in cyberspace are inherently fuzzy. It becomes harder and harder for people to find the things they are looking for, and for those offering things to find the people who want them.[1]

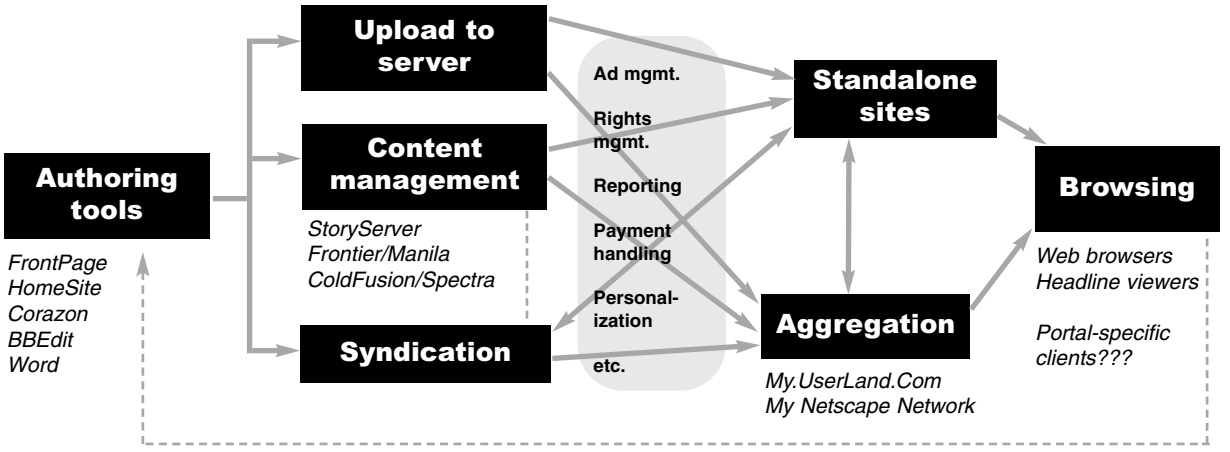


Figure 3 -- Content flows in online syndication networks.

One solution to the chaos of the Web is to create new centers around which everything else revolves. Portals and infomediaries both tap this opportunity. Syndication may provide a self-organizing alternative. Like the neural networks of the brain, syndication webs are comprised of interacting but independent actors who need not be aware of one another to support end-to-end transactions.

1 We took up many of these themes in our recent analysis of search engines. See Release 1.0, 1-99.

SYNDICATION STANDARDS

Standards are crucial to the emergence of a robust online syndication marketplace, because syndication necessarily involves exchange of information between several parties. Without standards, partners would have to specify content formats for each transaction, adding a needless layer of friction to the process.

Standards succeed when they get a critical mass of acceptance. The means by which they do so vary, as shown in figure 4.

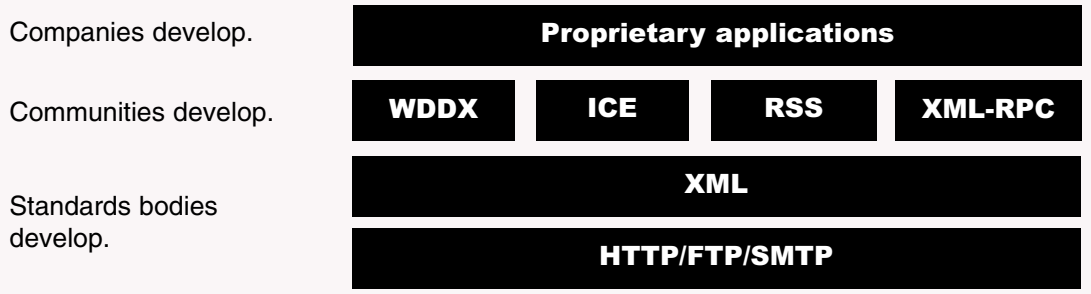


Figure 4 -- Syndication standards.

In the syndication world, the critical baseline standards are the Net's transport protocols — HTTP for the Web, FTP for static files and SMTP for e-mail — and the near-universal syntax for describing objects: XML (extensible markup language). The transport protocols have been standardized for some time, although this layer will evolve to better support streaming media and isochronous data types such as voice. XML has been officially endorsed by the World Wide Web Consortium (W3C) for little over a year (see **Release 1.0**, 5-98), but it has rapidly gained favor as a foundation for exchanging information between applications. All the higher-level protocols described below are built on top of XML, as are similar efforts in other domains such as Microsoft's Biztalk initiative to define standard XML-based vocabularies for common business processes.

ICE

The first standard defined specifically for Web-based syndication was Information Content and Exchange (ICE), an effort spearheaded by Vignette. Vignette began as a provider of content-management software to media-oriented sites such as CNet and ZDNet but has broadened its products to support a range of dynamic e-commerce relationship-management functions (see **Release 1.0**, 9-98). Many of Vignette's customers engaged in syndication, and the company saw how important the model could become. As vp of products Bill Daniel predicts, "We're on the cusp of this becoming a requirement in building your Web presence."

Vignette could build its own software platform to manage content syndication, but it needed the support of other companies to achieve a standard.[2] Even if Vignette controlled the syndicator's content it couldn't be sure

2 Ideally the technology for handling syndication relationships would have been built into HTTP. Given that it wasn't, a separate standard is the only way to get anything into the market quickly enough.

its software would be running on all the aggregation and distribution sites on the other end. Gaining the trust of other major companies meant ceding control of the process to an independent consortium.

Hence ICE. The ICE consortium has 13 companies including Vignette, Adobe, National Semiconductor, CNet, Microsoft, Sun and Reuters in its core authoring group, which must approve any new members. The ICE advisory council, which is open to any interested company, now includes close to 100 members.

Version 1.0 of the ICE protocol was released in October. It defines the XML-based grammar and vocabulary for syndicator-to-distributor transactions as a series of requests and responses. ICE also allows syndication partners to define and manage ancillary business rules, such as how frequently information should be updated and what limits the syndicator places on redistribution. Although designed around the needs of content syndicators, ICE is payload-independent, meaning it can theoretically support any form of syndication including commerce and dynamic objects.

RSS and <scriptingNews>

The leading example of a lightweight syndication protocol that contrasts with ICE's complexity is Netscape's RDF Site Summary (RSS) format. RDF, the acronym within an acronym, stands for Resource Definition Format, a W3C standard for encoding semantic information in XML. (We discussed RDF a year ago in connection with content filtering. See **Release 1.0**, 5-98.)

RSS is designed to syndicate hyperlinked summaries of site content in bullet point form (see figure 5). It describes only the format of content, not the underlying business rules, and it offers far fewer options than ICE. However, this makes it much easier to implement. RSS is ideal for portals that want to offer users a wide array of content choices that can be aggregated onto a personalized page. Coincidentally enough, that's the function of Netscape's Netcenter portal. Because RSS is an open format, however, much like Netscape's open directory project, any portal or other site could incorporate content feeds from RSS-compatible sites. As went to press Netscape was planning to release the RSS 1.0 spec publicly in a matter of days.

UserLand Software's Scripting News site uses a syndication format similar to RSS (see page 16), the main difference being that the <scriptingNews> format allows for more information than a simple hyperlink in each bullet of a content summary. The release version of RSS will include some additional <scriptingNews> tags even though Netcenter doesn't yet support them, and it's likely the two standards will converge down the road.

WDDX and XML-RPC

Two standards have been proposed for syndicating application functionality across the Web. (We discuss application syndication in greater detail starting on page 25.) Both provide XML-based frameworks, but they approach the problem from different angles.

WDDX, developed last year by Allaire (see page 26 and **Release 1.0**, 3-99), is built around the concept of an XML middleware layer that transmits data

between different applications in standard formats. WDDX serializes and de-serializes native data structures so they can be interpreted by remote applications, but it doesn't concern itself with what the remote applications do with the objects they receive. From Allaire's perspective, this makes for a more lightweight protocol that doesn't require developers on either end to alter their programming models or to understand native XML. Allaire has released WDDX as open source through a distribution site at Wddx.org. More than 10,000 developers have downloaded the software development kit (SDK), and WDDX has been incorporated into the core releases of the popular Python and PHP languages.

The other standard, XML Remote Procedure Calls (RPC), seeks to go beyond object serialization to support more-sophisticated distributed computing. It incorporates semantic structures that allow applications on one system to call procedures on remote systems. XML-RPC is being championed by UserLand Software (see page 15), and Microsoft has also expressed interest in it.

Neither WDDX nor XML-RPC has been submitted to formal standards bodies. W3C has begun work on HTTP Next Generation which is supposed to include an extensible mechanism for remote procedure calls, but it's very early in what promises to be a several-year process. Allaire and UserLand have each built products that incorporate their favored protocols. Both would-be standards have also developed followings among independent developers.

Currently each protocol includes features the other lacks because they address somewhat different needs, though it would be straightforward to build WDDX features on top of XML-RPC and vice versa. Discussions between the two camps have generated substantial points of agreement, but a converged spec hasn't emerged. Meanwhile, UserLand is working to support WDDX-formatted payloads in XML-RPC, while Allaire is building a general-purpose object request broker model on top of WDDX. A single standard for application syndication would be nice but not essential; developers have already created translators in both directions between WDDX and XML-RPC.

Is your standard more standard than mine?

Given the immaturity of the syndication space, it's not surprising that the industry hasn't rallied around a single set of standards. While it's essential that some elements, such as XML, be universally adopted, the higher-level environment may remain fragmented. So long as all the interfaces and standards for exchanging syndicated information are straightforward, open and documented, it will not be difficult for software or service providers to support multiple formats.

The important thing is that each component be substitutable. If a content creator likes UserLand's Corazon (see page 16) or Microsoft Word for authoring but wants to use Vignette for content management and Allaire's software to handle the syndication process, it should be able to do so.

Vignette and Allaire (see page 26) take a platform approach and seek to provide all the pieces for a customer, much as Microsoft offers a tightly integrated back-office suite. Microsoft tends to be less-than-forthcoming on details of key APIs, and it also controls the COM specification for integrating components. For better or worse, Microsoft can afford to do

so. On the Web, with XML taking the place of COM, it's a different story. So long as other software providers can hook into Vignette and Allaire's platforms, companies won't be locked into a single-vendor environment.

The reaction to ICE exemplifies this tension. ICE's backers hold it out as an open, industry-wide standard, which they have submitted to the W3C. However, to many others (such as UserLand, see page 15) it is a limited effort by a particular group of companies. So far, most of the largest players have endorsed ICE. The protocol clearly meets the needs of traditional content syndicators and the aggregators they deal with.

However, because ICE provides a comprehensive framework for all types of syndication relationships, it may be overkill for more limited forms of content exchange. If expensive ICE-compliant software such as Vignette's $50,000 Syndication Server becomes a requirement to link together companies into affiliate networks, the market will likely bifurcate into big and small players. At this stage these two markets can coexist. Should this become a head-to-head competition, though, the moral of the Internet's story is that simple, open-source protocols that scale up tend to win over complex top-down approaches (see **Release 1.0**, 5-99 on IPv6).

CONTENT SYNDICATION

Familiarity breeds content

Portals such as Yahoo! recognized early on that these offline syndication models could be translated to the Web. Portals are generally advertising-supported, eyeball-driven businesses, much like broadcast networks (see **Release 1.0**, 10-98 on portals). Portals thrive on quantity because they offer users the convenience of many resources in one place, and uniqueness of content isn't so important. Yahoo! began syndicating news stories from Reuters not long after it became a commercial site. Nowadays virtually all portals offer syndicated content from news providers and from directory aggregators such as Infospace.com.[3]

News stories on portals are only the tip of the iceberg. On the Web, anything is potentially syndicatable, and any site is potentially an aggregator of syndicated material. For the industry to move from the current limited syndication market to a ubiquitous syndication environment, software and service providers will have to reduce dramatically the friction involved in the process. Ultimately, when everything is everywhere, what consumers want will be wherever they are, all the time.

As Vignette's Bill Daniel explains: "What our customers want is the ability to extend their presence beyond their own Website. It's not just about moving content around the Net. It's also about capturing the business rules and the kinds of information that you want to move back and forth between two partners in a business relationship." Standards such as ICE are necessary but not sufficient. It must be easier to publish content in syndicatable form, to manage relationships between affiliate partners and to find appropriate content for a particular site or user base.

3 There are also services such as Moreover.com that provide smaller sites with free syndicated news headlines in exchange for advertising space.

Meeting these needs will do more than expand the use of syndication. It will change the nature of Web authoring, much as word processors transcended the mechanics of writing for the printed page on an IBM Selectric.

Writing a memo in Microsoft Word is a different process than composing an e-mail message in Eudora. Similarly, creating content for the Web is not just a new form of word processing; it's a wholly new activity (groupware for publishing, in a way). The Net was created for text-based systems where the primary form of content was marked-up scientific documents. Mosaic and then Netscape Navigator brought the Web's display environment up to parity with contemporary graphical user interfaces, but didn't advance the authoring paradigm in the same way.

Web content necessarily inhabits a distributed, server-based environment. That's what makes it inherently syndicatable. Web authoring tools, however, are still largely stuck in the single-user, desktop file system world.[4] This approach may work fine if you're creating your personal home page or the look and feel of an e-commerce site, but it runs out of steam for new forms of content native to the Web. Prominent among these is the Weblog, which we discuss in more detail starting on page 16.

Because syndication is so closely tied to authoring, it's not surprising that several of the companies pushing the envelope on Web syndication technology come out of the content management and Web development spaces. Most notable is Vignette, which went public in February. Vignette is the closest thing to a 900-pound gorilla in high-end content management, although the company itself is more interested in competing against players such as BroadVision in the broader packaged e-commerce and relationship-management space. (See **Release 1.0**, 9-98.)

Vignette was the driving force behind ICE, and in October 1998 the company released Vignette Syndication Server, the first ICE-compliant syndication management application. Vignette's customers tend to be large sites such as CBS SportsLine, National Semiconductor and Mecklermedia that generate significant quantities of original content which they hope to syndicate. Syndication gives Vignette an opportunity to sell additional software to its customers, and affiliates of those customers become prospects for Vignette's flagship Story Server product.

The other leaders in the emerging content-syndication space take different angles. While Vignette comes from the syndicator side, startup ShiftKey has roots as a developer of tools that content aggregators use to regularly download content from syndicators. UserLand and Allaire build developer platforms at significantly lower price points than Vignette, and syndication support flows out of their efforts to offer greater packaged functionality for end-to-end site development and management. (We cover Allaire beginning on page 26 in the distributed computing section, but it's also an important player in traditional content management.) On the service provider front, both iSyndicate and StudioOne focus on content

4 Similarly, today's products use traditional relational databases on the back end, rather than native XML object repositories.

rather than technology, although iSyndicate sees itself as a pure middle-man while StudioOne creates and owns original material.

ShiftKey: I loved the product so much I became ceo of the company!

When we asked ShiftKey president Adam Souzis how the company originated, he admitted that, "We stumbled on the opportunity." Co-founder and cto Arthur Do wrote the WebSurfer Web browser while at NetManage in 1994. In 1996, after leaving the company, he wrote a java application called SiClone to replicate Websites by periodically crawling through Web servers and downloading updated content.

An employee at Reuters, one of the largest syndicators of news content in the offline world, discovered Do's free java source code on Gamelan, Earthweb's precursor to Developer.com. Reuters realized that SiClone could be used to facilitate the company's pioneering efforts to syndicate for the web. Prior to that time, Reuters had to develop custom systems to update content to each of its Web distribution partners. SiClone could regularly crawl the Reuters site and pull down updated content to subscribers on a periodic basis.

Do and Souzis, previously lead engineer at NetObjects, formed ShiftKey in April 1998 to commercialize the SiClone technology, with Reuters as the initial customer. The man on the other end of that relationship, Reuters vp of global syndication David Mathison, liked the software so much that in May of this year he left Reuters to take over as ceo of ShiftKey.

Mathison sees ShiftKey's solution as integral to Web syndication becoming both scalable and open to both small and large participants. The software automates the process of syndicating and aggregating content. "ShiftKey creates a 24-hour lights-out editorial operation," he says. "The beauty of SiClone is that it allows the content to be delivered in a very straightforward format, and it can transform that content so that it fits into the look and feel of an aggregator's site."

The ShiftKey Syndication System includes the SiClone client for aggregators and server software for syndicators. A server license bundled with 10 client licenses costs $35,000 with additional clients available for $1,500 each, or aggregators can purchase the clients alone for $2,000 each, with a minimum of five licenses. Mathison and Souzis say they want to see their client software running on every major content aggregation and distribution site as well as major intranets, rather than compete head-on with companies such as Vignette on the syndicator side. ShiftKey is considering other pricing options to achieve this goal. In addition to Reuters, which recently made ShiftKey its global platform for Web-based syndication, ShiftKey also has TheStreet.com and IBM as major customers.

Souzis believes ShiftKey's software will facilitate a "wholesale content marketplace" that can't fully emerge until the distribution relationships between sites are automated. Once such mechanisms are in place, the next step will be to layer on additional services. "Publishers are very concerned about maintaining their brands, digital rights management and targeted advertising," Mathison explains. "What we'd like to do is be able to provide the publishers with more value-added services along those lines." Mathison also sees syndicated streaming media on the Web as an

important future opportunity, once technical challenges in managing such content in a syndicated environment are overcome.

ShiftKey enthusiastically supports ICE and is a member of the core ICE authoring group. "ICE allows small, medium and large publishers to take advantage of syndication," Mathison says, because it eliminates the need for every syndicator or distributor to handle the details of content formatting and delivery. Regardless of which content management system they use, syndicators can gain access to every site running an ICE-compatible client such as SiClone. ShiftKey is happy to ride the coattails of the larger Vignette's efforts in promoting ICE; although the companies sometimes compete, ShiftKey's products are positioned at a lower price point and are more subscriber-centric.

ShiftKey's system also opens up what Mathison calls a "giant viral lead generator." The Reuters deal alone gives ShiftKey access to hundreds of global sites distributing Reuters content, as well as the thousands of affiliates of those sites.

ShiftKey currently has 11 employees and offices in both San Francisco and New York. Souzis and Mathison hope to close their first venture funding round soon, and are confident there is a significant opportunity even for a small player. "The interesting thing about the space we're in is that there are no real Microsofts," Souzis concludes. "There's no dominant player as far as a publishing platform or content management platform — it's very heterogeneous. I really don't see that changing."

iSyndicate (...youSyndicate, weAllSyndicate!)

iSyndicate ceo Joel Maske co-founded Galt Technologies, an early Web-based financial information Website that also syndicated content. After selling the company to Intuit in late 1996, Maske says, "I was really captured by the idea of creating a syndication marketplace." He founded iSyndicate to provide a one-stop shop for syndicatable content.

iSyndicate offers content from 420 providers to more than 100,000 affiliate sites in standard formats. The company now has 52 employees and has raised $18 million from investors including Hambrecht & Quist, Vignette, Infospace.com, Scripps Ventures and Labrador Ventures.

Maske believes that the sheer volume of content on the Web necessitates intermediaries to manage the relationships between syndicators and distributors. iSyndicate serves some sites, such as Geocities, that have direct relationships with many content providers, but even the largest sites can't quickly establish deals with hundreds or thousands of syndicators. On the other end of the spectrum, iSyndicate offers a Web-based "self-syndication" interface for small sites that automatically packages content in standard formats.

iSyndicate is a service bureau, not a software company. Maske believes the technical aspects of online content syndication will become commoditized over time, but aggregators and distributors will still need intermediaries to help them determine what sort of content is available, in what formats and under what terms. "The Web was built for service business

StudioOne: barter syndication for the Net

StudioOne ceo Andrew Susman was responsible for sponsored content on Time-Warner's late, not-so-lamented Pathfinder site. Swimming against the corporate tide, he launched programs to syndicate content from publications such as *Time* and *People*. "Instead of a belief that Pathfinder would suck everyone onto the Net, it was the idea of disaggregating those brands and taking them out to the most appropriate places," he says. Time-Warner couldn't make Pathfinder successful, but Susman remained convinced the syndication model could work for the Web.

Susman founded StudioOne in late 1997 along with former NBC evp Bob Blackmore, who serves as the company's chairman. Where iSyndicate wants to be an intermediary, much like print syndicators such as United Feature Syndicate, StudioOne develops content itself like King World or Carsey Werner. "We're not recycling existing programs that other people have created," Susman says, "We're creating the programs and other elements from scratch for first-run syndication." The company, based in New York City, currently has 10 employees. So far it has been self-funded and is profitable, although Susman is "mindfully exploring" the possibility of raising venture funding.

StudioOne develops Web-based programming targeted to specific audience niches, and then syndicates it out for free to as many sites as possible. Advertisers pay StudioOne to sponsor the channels as a means of promoting to their desired audiences online, an arrangement known as barter syndication in the offline media world (see page 2). Because StudioOne, rather than the distribution site, sells the advertising, it can tailor the content as needed to attract sponsors. "We're creating original programming that meets the exact needs of an advertiser and the people they are trying to reach," says Susman.

StudioOne has created two programs so far, targeted to gamers and car enthusiasts, both sponsored by Honda. Susman expects the company will have ten programs available by the end of the year. The programs feature authoritative personalities in the field, such as former *Motor Trend* editor Jack Nerad for "Driving Today." They create a sticky experience for users — Susman says they spend an average of eight minutes inside the programs, a significant length for Web content.

Susman points out that barter syndication has worked for every other mass medium, and he sees no reason the Web will be different. "Not everyone has the money and ability to create an unlimited amount of quality programs," he explains. "When you have distribution fragmentation like you do on the Net, it is an ideal situation for syndication, because programmers have more leverage." StudioOne in effect consolidates advertising dollars and uses that revenue to finance programming, rather than attempting to recoup the cost of content creation by selling individual ad banners at ever-dropping cost-per-thousand rates.

StudioOne's TV-based model makes even more sense as the Web expands to support rich media. Susman says the company is preparing its content for widespread availability of high-speed Internet connections, which will allow more TV and radio-like streaming content.

models," Maske asserts. Using a service provider is "inherently much more efficient, and allows you to move much faster if you can plug into a service offering which is going to take care of all that nasty stuff on the back end."

iSyndicate strongly supports ICE and has licensed Vignette's Syndication Server as a technology platform (Vignette invested in iSyndicate in June). However, Maske says the company will support other protocols as well if they are more appropriate for different types of syndication relationships. "As ICE or any other standard takes hold, the sheer amount of syndicatable content grows exponentially," Maske argues.

Maske admits that the syndication marketplace on the Web has taken longer to emerge than he expected. Part of that he attributes to the differences between offline and online syndication. "Syndication on the Web is much different from syndication in old media," he explains. "In old media you hooked up with a syndicator and that was the horse you picked. On the Web, we're just a service provider for you to plug into. You can still do your own syndication deals." Content providers are now coming around, and at a macro level content is once again becoming highly valued for Websites to differentiate themselves and draw traffic.

Syndication will open up new opportunities for small content providers, Maske believes. "It's no longer 2,000 editors at newspapers deciding what gets distributed to the masses," he says, "It's the masses deciding based on popularity." At the same time, large content originators such as CNet still find syndication valuable because they can reach a far greater audience than visits their own Websites. By syndicating only teasers such as headlines that link back to their sites, or by creating branded "boutique" environments that maintain the look and feel of syndicated content within another site, large syndicators can keep control of their brands even when content is displayed elsewhere.

Maske is optimistic for the future. "In the next 12-to-24 months we'll see exponential growth in the ways in which sites can exchange information," he predicts. As syndication becomes more common on the Web, both content originators and distributors are developing new business models to take advantage of the possibilities.

UserLand's new frontier

Back in 1991 UserLand Software launched a scripting language for the Macintosh called Frontier (see **Release 1.0**, 5-91). Frontier provided technically savvy users with sophisticated tools to automate functions and integrate applications, and gained a loyal following in the Mac developer community. Apple took the wind out of UserLand's sails when it bundled its own AppleScript scripting language with the MacOS, and Frontier also suffered from the Mac's plummeting market share in the mid-90s.

But UserLand ceo Dave Winer, who previously developed the pioneering outliners ThinkTank and MORE, has always been willing to adapt. As the Web blossomed, Winer realized that Frontier's scripting environment could be perfect for building complex Websites. Frontier has evolved into a cross-platform Web content management tool, with Winer's and UserLand's various Websites serving as proof of concept for the technology.

One of these sites is Scripting News, a resource for the community of users and developers around Frontier and other scripting platforms. Every day Winer posts his own musings and annotated pointers to interesting materials elsewhere on the Web. There are thousands of sites of this type, known as Weblogs, covering every topic imaginable. A good Weblog is a filter more powerful than any search engine, a daily road map through the overwhelming volume of material on the Web. Their creators — let's call them link jockeys — are motivated by the same passion that drove people to learn HTML when personal Websites were novel.

The only problem is that users must locate and re-visit favorite Weblogs rather than having the ones they like come to them. (Remember push?) Which is how we get back to syndication.

Since December 1997 Scripting News has been generated in an XML-based format designed to be regularly crawled by a remote script. During 1998 and early 1999, Winer focused on building out Frontier's Web content management capabilities and making it easier for less-technical users to take advantage of the platform's power. UserLand was also active in developing XML-RPC (see page 8) for Web-based distributed computing.

Then in March of this year Netscape announced an enhancement to its Netcenter portal known as the My Netscape Network, which allowed anyone to syndicate content to Netcenter users using the RSS format (see page 8). Netscape's announcement attracted little attention in the press, but dozens and then hundreds of Weblogs quickly began syndicating their content in RSS. Winer immediately realized the synergies between RSS and his own <scriptingNews> format, so he built an engine in Frontier capable of reading RSS files and managing subscriptions through the My.UserLand.Com site.[5]

People power: Manila and Corazon

UserLand is now developing two new products based on Frontier that make it much simpler to create and syndicate Weblog-type content. Manila brings together template-based content management along with features such as dynamic calendars, discussion boards and a search engine in an easy-to-use package. The system writes to the <scriptingNews> content syndication format, which means syndication is automatically enabled.

"The goal of Manila is to produce Websites easily and beautifully," Winer explains, "but it can it can easily be adapted to producing syndication channels." Winer sees three primary interfaces for syndicated content, all of which Manila will support automatically: by time (with recently updated content listed on top), by search engine (based on keywords and full text indexing) and by Yahoo!-style directory (using index categories specified by the content creator). In addition to the software, Winer is considering offering hosted services, either directly at My.UserLand.com or through partners, to support Manila sites and affiliate networks.

Manila allows users to edit text directly in a browser. Winer believes PC-centric tools such as word processors are inappropriate for creating content designed to live only on a server. Browsers today may not be

5 Winer is optimistic RSS and <scriptingNews> can be merged, but if not he'll support both and let users decide which to write to.

good writing environments, but they are built to understand the hypertext transfer protocol (HTTP) used to transfer information between clients and servers over the Net. Manila uses cookies to identify and authenticate users; if you have permission to modify a page an “edit this page” button automatically appears in your browser window. No plug-ins or other client applications are required, nor is knowledge of HTML or XML. UserLand is also building a companion Web authoring client called Corazon, for times when users want more-powerful writing tools and an outliner.

Winer believes tools like Manila and Corazon will democratize content creation on the Web. “There are so many people that want to write for the Web, but the Web hasn’t opened up for them yet,” he argues. One consequence of this vision is that different browser brands will once again compete fiercely, because Web-centric authoring tools will be the next killer app on the desktop. “Every portal has to have its own browser in development,” Winer asserts.

UserLand’s offerings — Frontier, Manila, Corazon and the My.UserLand.Com aggregation site — all talk to one another using open protocols such as RSS and XML-RPC, meaning customers can swap out any piece for a standards-compliant competing product. Winer finds ICE “incomprehensible” and says the Vignette-led group refused to include UserLand, a Vignette competitor, in its development efforts. Frontier’s much lower price point puts it in a different segment from Vignette’s Story Server, however, and Winer says he’ll be happy to support whatever standards gain acceptance in the market through My.UserLand.Com.

Pricing and availability for UserLand’s forthcoming products have not been announced, but Winer says he hopes to ship Manila in September and Corazon about a month later.

From Weblogs to individual portals

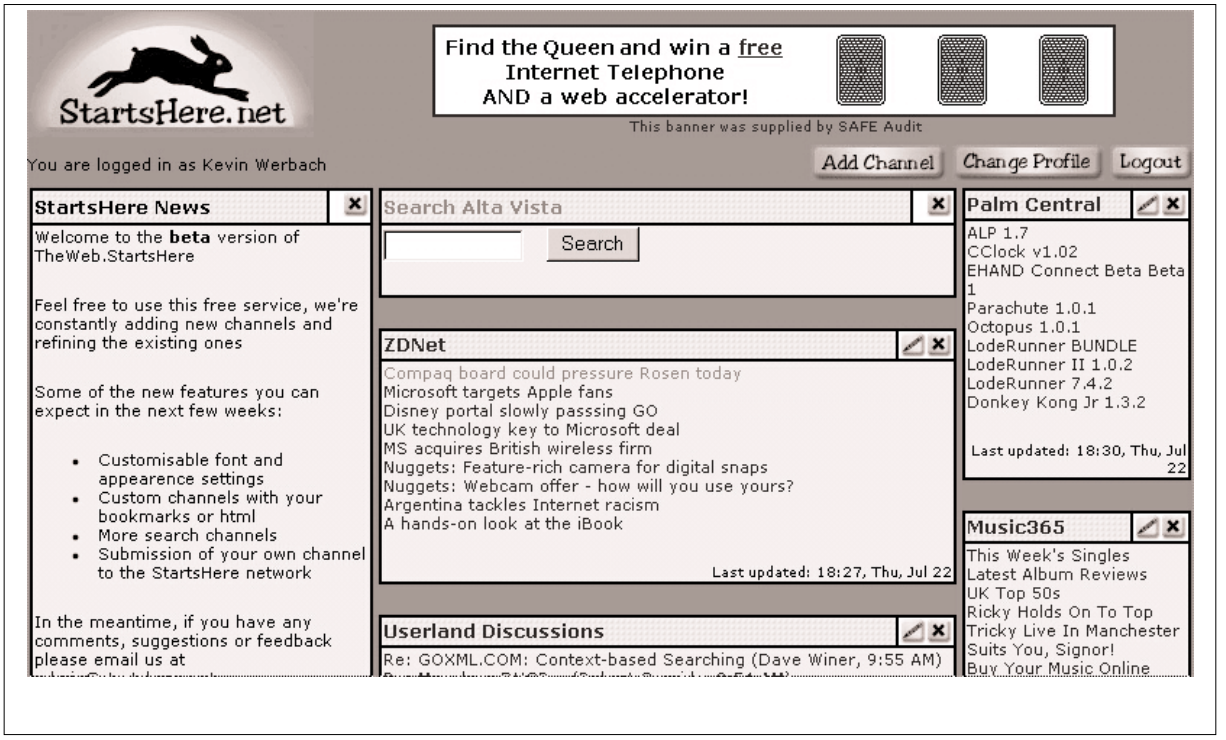
Web interface designers travel in herds. Or perhaps the theory that once a single member of a species develops a capability it’s instantly transmitted to other members holds water after all. How else to explain the numbing similarity of major Websites? First it was the solid-color navigation strip down the left side of the page, then the Yahoo!-style hyperlink column headings, then the My-ExciteLycosYahoo!NetscapeAltaVista quilt of personalized component boxes. At least Yahoo! lets you choose the color scheme.

Personalization should foster greater variation, but everyone offers the same lineup of choices such as Web-based e-mail, sports scores, stock quotes, news headlines and local weather. Fortunately, there is a way out. The My Netscape Network, which has had virtually no marketing and is buried on the Netcenter site, now offers over 600 RSS-formatted content feeds that users can incorporate into their personalized Netcenter pages.

“We wanted My Netscape to be the starting point for the entire Net,” says AOL director of personalization technology Eckart Walther. Open content syndication formats give users the benefits of both the Web’s breadth and the depth of resources and technologies that portals have developed internally. As Walther explains, “The portals start acting more behind the scenes: more server-to-server than server-to-client.”

This is great for all online content providers, but it's especially important for small and non-commercial publishers. ZDNet can work out a deal to have its news headlines syndicated on MSN or AltaVista. That isn't the case for Jorn Barger's Robot Wisdom page or countless other Weblogs, even if they develop strong followings. But these smaller sites can now syndicate their content through the My Netscape Network.

For a taste of the future, go to theweb.startshere.net. The site, created by British developer Ian Davis, looks crude and incomplete today, but it could be a template for something big: the individual portal. It's an aggregation site composed of nothing but syndicated content feeds in open formats such as RSS. The My.UserLand.Com site offers something similar called "favorite" channels, without the layout options. And the shareware Carmen's Headline Viewer organizes syndicated hyperlinks with a standalone desktop app. Just as HTML democratized authoring, individual portals could democratize content aggregation.



Davis is also developing an open content syndication (OCS) directory specification for describing and exporting lists of content feeds to other aggregation sites.

In a world of millions of content feeds, it becomes increasingly hard to find anything. This, after all, is what made people turn to Yahoo! in the first place when the number of Websites grew beyond a manageable level. Open content syndication networks cry out for open directories.

Thankfully, efforts are underway to meet this need. One is the Netscape Open Directory (formerly NewHoo), a Yahoo!-like directory that uses a distributed network of volunteers to classify sites. Another is James Carlyle's xmlTree, a directory of XML content resources organized using the Dewey Decimal System. xmlTree listings themselves are tagged in XML

with Dublin Core RDF metadata (see **Release 1.0**, 5-98), for easy searching by humans or Web-based intelligent agents.

AFFILIATE E-COMMERCE

Sellers' paradise

Syndication networks in the world of e-commerce are generally referred to as affiliate programs, but the relationships track the content syndication model precisely. Merchants, who actually process transactions, are the equivalent of content originators. They want to acquire customers as cheaply as possible. Other Websites, ranging from large content providers such as the *New York Times* to the thousands of personal pages dedicated to *South Park*, want to provide additional services to their audiences and to generate additional revenue. Affiliate relationships meet both needs.

Jupiter Communications estimates that affiliate programs accounted for 11 percent of consumer e-commerce transactions in 1998. By 2002, it predicts affiliates will generate $9 billion of online retail sales, a quarter of the total.

There are analogues to syndicated commerce in the physical world, such as the designer clothing boutiques in department stores, the Starbucks cafes in Barnes & Noble bookstores or even the Coke machine in your local gym, but the model becomes far more powerful in cyberspace. In the brick-and-mortar world, products take up shelf space wherever they are sold. One business can refer you to another, but you still need to physically travel to the second business, which can make the process inconvenient. Even when the affiliate is physically located within another business, it directly takes floor space and therefore revenue away, not to mention competing for dollars against the host.

Amazon.com's Associates program is the most famous example of syndicated e-commerce. Amazon.com began the program in July 1996 and currently has nearly 300,000 associate sites. Associates receive commissions of up to 15 percent whenever a customer clicks through a link on their site and purchases the book through Amazon.com. By driving traffic back to Amazon.com's site and vastly expanding the reach of its brand, all with no up-front marketing expenditures, the Associates program has been a major driver of Amazon.com's astounding success. Virtually all the largest e-commerce sites offer similar programs today.

However, the affiliate approach is still vastly under-utilized. An April 1999 Forrester survey found affiliate programs were ***both*** the most-effective and the least-employed of 13 online marketing techniques. As with content syndication, intermediaries will facilitate the shift from individual ad-hoc partnerships to automated multi-lateral relationships. And as core dynamic site development platforms from companies such as Vignette and Allaire build in syndication features, establishing an affiliate program will become increasingly simple.

The benefits of commerce syndication are not limited to the syndicators. Affiliate commerce provides incremental revenue at no additional cost. Moreover, affiliates may actually provide a better customer experience

than the originating merchant, because they can create recommendations and product groupings that appeal to narrower audience niches. If you love Al's mountain biking page, you'll be more likely to trust his recommendations about products than the ones on more impersonal merchant sites.

Online merchants typically pay their affiliates a percentage of transaction revenue, which suits the merchants because they incur costs only when they generate a revenue-producing sale. Other options include a flat fee per transaction (usually for high-value items), a per-clickthrough charge even if the customer doesn't complete a transaction on the merchant site and cost per thousand impressions (CPM) on the affiliate site, the traditional model for banner advertisements.

With affiliate programs proliferating, commercial sites are becoming more sophisticated and are looking for measurable returns. That sometimes means using a combination of revenue models, such as a guaranteed payment for impressions but the possibility of greater payments if transactions exceed a certain threshold.

A walk down affiliate lane

A random sampling of the more than 700 sites with affiliate e-commerce programs listed in the Refer-It directory:

Search Engine Watch, 1 (888) Live Flowers, PassLogix, FantasticLinks, Global Investor Bookshop, Health4Her.com, Library Video Company, Petstore.com, Progressive Auto Insurance, Planet Rock Casino, Valley Internet Services, Ghostmail.com, 1 800 USA Hotels.com, 1StopAuto.com, Access Erotica, Greentravel.com, Astrology.net, Art.com, Autoweb.com, Bear Resistant Containers, Brainplay.com, California Health, ChatSpace, Classified Club Online, CompuBank, DatingCash.com, Dogtoys.com, DownloadStore.com, Dr. Shredders, E * Debt Consolidation, eBags, Enews.com, Fogdog Sports, FreeShop.com, GetSmart.com, GIF Wizard, HostIndex.com, HyperBanner Network, iCat, Impulse! Buy Network, 2GRRRLS, SinglesNet, JFAX.com, Latino Love Club, Link Alarm, Lending Tree Branch Network, NextCard Internet Visa, OfficeMax.com, Peapod, sixdegrees, Term Life Pros, The CityNet, United Fishing Association.

Affiliate intermediaries

Amazon.com had to build the software for its Associates program in house, because nothing off-the-shelf existed. Amazon continues to manage its own program, though it has become very much the exception. Just as iSyndicate, ShiftKey and Vignette recognized the opportunity for businesses concentrating on the infrastructure for content syndication, companies have emerged to manage affiliate programs for e-commerce sites. In return, these intermediaries typically take a percentage of the commissions merchants pay out through their affiliate programs plus an up-front fee.

LinkShare and Be Free (ironically both founded in 1996 by pairs of siblings) are the two leaders in this area, with newcomer Affinia offering a novel twist on the model.

In addition to simplifying management of affiliate programs, these intermediaries can make them more valuable. More sites will sign up as affiliates if they can find programs through central directories and if they need not go through a different process each time they sign up.

Today affiliate intermediaries tend to be standalone companies. The space is getting increasingly crowded, with companies such as Commission Junction, Nexchange, iMediation, LinkExchange and Vstore entering in recent months. Before long, however, affiliate management will likely consolidate with other e-commerce enablers such as advertising networks (DoubleClick, 24/7 Media, Flycast) and site-management platforms (BroadVision, Open Market, Vignette, Silknet). Affiliate management, like personalization (see **Release 1.0**, 9-98), will become a "must have" element of successful e-commerce ventures.

MIA: affiliate commerce standards

There appear to be no standards under development for affiliate commerce networks analogous to ICE, RSS, WDDX and XML-RPC. ICE and WDDX could be used to transmit information between online merchants and their affiliates, since these transactions tend to involve static data. Jeremy Allaire, for example, lumps affiliate commerce into content syndication, distinguished from more far-reaching application syndication.

We see commerce as a distinct sub-category, not because the content exchanged is all that distinct, but because the surrounding relationships and business models are different. What matters in syndicated commerce isn't so much the process by which information gets to the affiliate, but the life cycle of transactions that flow from that information.

We suspect standards efforts haven't progressed in this area because the leading players are solution providers rather than technology vendors. LinkShare, Be Free and Affinia offer their customers soup-to-nuts platforms; standards might pull apart these functions and loosen their control. By contrast, the content syndication market is dominated today by software companies (Vignette, ShiftKey, Allaire, UserLand) and pure-play aggregators (iSyndicate), each of whom recognizes that they need the other. Netscape straddles both categories but doesn't have the market power (or inclination) to force the world into a proprietary approach. Standards such as ICE allow these providers to plug into comprehensive solutions, thus expanding the market.

LinkShare: get on the network

LinkShare, founded in 1996 by Stephen and Heidi Messer, was the first company to build an affiliate network. Stephen still serves as chairman and Heidi as president. The company, based in New York and Colorado, now has over 50 employees and venture funding from Internet Capital Group and Comcast. It brought on Jerry Kern, formerly vice chair of cable giant TCI, as its new ceo in April.

Kern says the Messers did two things right in building LinkShare: developed good technology and focused on merchants as the drivers of affiliate

program growth. LinkShare's software manages affiliate programs for merchants, offering unique features such as support for hybrid commission/ clickthrough/impression revenue models and return tracking that allows merchants to record an affiliate sale even if a customer makes a purchase on a return visit. LinkShare has also created a network of affiliates who can sign up for any of the programs it supports. The network model makes it easy for merchants to add affiliates quickly, while also making it easier for affiliates to join several programs. LinkShare will also support merchants who want to limit programs to their own unique affiliates.

Kern believes the most valuable element of the affiliate model is that it allows merchants to measure the effectiveness of their marketing efforts directly, rather than relying on indirect measures such as ad views and clickthroughs. "It doesn't make any sense for a merchant not to have an affiliate program," he argues. As LinkShare broadens its network, he points out, it aggregates a large volume of information about customer behavior, which could become a valuable commodity. Kern also sees LinkShare's model extending to other media, such as interactive television when it finally emerges.

LinkShare currently serves more than 200 online merchants including Dell, Cyberian Outpost, Borders.com, The Sharper Image and Virtual Vineyards. Most of the merchants have signed two-to-three year exclusive contracts, precluding them from participating in other affiliate networks. LinkShare also has more than 65,000 sites in its affiliate network.

Be Free: private-label affiliate programs

Be Free has been relatively quiet up to now as it built its merchant customer base. That reflects the company's strategy of concentrating on private-label programs for merchants, rather than attracting affiliates itself. Be Free provides software that e-commerce sites use to manage their affiliate programs, much as Inktomi processes search queries for portals, but affiliates still sign up individually with the merchants rather than through a central aggregation point.

This approach tends to appeal to the larger merchants, especially those seeking to bring successful brick-and-mortar operations online. Such companies tend to want greater control over their brand and customer lists, and they often have established relationships with content partners they wish to preserve. They may be willing to outsource the infrastructure for their affiliate program to a company such as Be Free, but they are more concerned with developing an effective sales channel than with reducing time to market. The focus seems to be working: Be Free now has over 125 merchants using its platform, including priceline.com, Value America, barnesandnoble.com, American Greetings and GeoCities.

Barenesandnoble.com served as Be Free's initial customer and also provided some seed funding. In 1998, founders Tom and Sam Gerace brought in current ceo Gordon Hoffstein, founder of PC vendor MicroAmerica. At the same time, the company closed its first round of venture funding of $10.6 million; it has since raised an addition $25 million with investors including Highland Capital Partners, Charles River Ventures, Matrix Partners, TTC Ventures and Michael Dell's MSD Capital. The company, located in Marlborough, MA, now has over 140 employees.

"We think of affiliate marketing as the least-expensive way to acquire a customer online, because you're only paying for performance," Hoffstein explains. Web-based affiliate programs based on hyperlinks on content sites are only the beginning he says, pointing as an example to a Be Free-created program at barnesandnoble.com that allows users to originate affiliate transactions using links embedded in e-mail messages.

Be Free works with merchants to maximize the effectiveness of their affiliate sales channels. Hoffstein says the reality is that it usually takes 8 to 10 months of trial and error to develop an effective channel. Be Free's platform allows merchants to test various merchandising approaches and to acquire the right affiliates to meet their goals.

Affinia: power to the affiliates

Affinia, based in Mountain View, CA, was founded in September 1998 and launched this month. The company has approximately 50 employees, and has received $15 million in funding from Sequoia, Oracle, Bowman Capital and Sarofim. Founder and ceo Kris Hagerman previously founded online yellow-pages provider BigBook and sold it to GTE. In thinking about what do to next, Hagerman discussed several startup concepts with his old Stanford professor Terry Winograd, who told him to concentrate on opportunities that could scale and leverage the distributed nature of the Web. Hagerman came up with the idea of an affiliate-management network that, unlike LinkShare and Be Free, focused primarily on small affiliate sites rather than the merchants on the other side.

Traditional affiliate programs use a link on the affiliate site coded so that when a customer clicks through the merchant's server can track the relationship. Content sites can recommend several different products or merchants, but this process must be managed by hand. Hagerman realized that most potential affiliate sites were oriented around a theme, and would therefore want to recommend a range of products corresponding to that theme. Affiliate program directories such as those operated by LinkShare, Be Free and Refer-It divide merchants into categories, but those categories don't extend down to individual products.

Affinia's solution is to build its own database so that affiliates can choose offerings of interest down to the product level. Affinia pulls in product information from its merchant partners either through direct data feeds or by crawling the merchant sites on a regular basis. Using patent-pending classification technology along with human "cybrarians," Affinia maps the products into its own ontology of categories, which affiliates can then browse and search.[6]

In addition to the database, Affinia provides affiliates with a Web-based customizable storefront builder that allows them to create catalogs of items from multiple merchants, along with personal reviews and recommendations.[7] Affinia expects to have over one million products from more than

6 Affinia's mix of human and algorithmic classification resembles that of filtering companies such as Content Advisor (see Release 1.0, 5-98).

7 Small business e-commerce enabler Bigstep.com has a similar feature, but only between merchants on its service (see Release 1.0, 3-99).

1,000 merchants on its network at launch, including many of the biggest names such as Amazon.com, eToys, Reel.com, PlanetRX and Garden.com. Because Affinia doesn't require any software integration, exclusivity or up-front payments on the merchant side, it can sign up merchants far more quickly than LinkShare or Be Free. It can also work on a referral fee basis with small merchants who can't support their own affiliate programs.

Vstore and Iconomy.com: The platform is the merchant

Taking affiliate e-commerce to its logical conclusion, why bother linking to an online retailer?

Startup Vstore, based in Scottsdale, AZ, announced its online "retail hub" this month. Founder and chairman Daniel Kennedy previously started sales-force automation vendor Saleslogix, and ceo Scott Melland oversaw Cendant's NetMarket online shopping club. The 35-person company has funding from Benchmark, Pequot Capital and @Ventures.

Like Affinia, Vstore allows content-oriented sites to build storefronts quickly and to stock them with a variety of products. However, Vstore itself has established relationships with distributors such as Ingram Micro and Baker and Taylor to fulfill transactions generated at its affiliate stores. Vstore provides affiliates with the products and categories to choose from and pays them commissions on every transaction.

Iconomy.com offers another twist on this model. The company has been around as online retailer BuySafe.com since 1995. Earlier this year it changed its name and business model to focus entirely on private-label e-commerce. Iconomy has built relationships with over 150 wholesalers and distributors, along with a software platform that allows it to create turnkey e-commerce sites quickly. In exchange for 50-to-70 percent of the gross margin on all purchases, as well as bartered advertising space, Iconomy handles design, fulfillment, customer service and merchandizing. Customers include GeoCities, Excite@Home, eGreetings, the *Los Angeles Times*, and Cybergold.

Affinia splits the commissions and referral fees paid by merchants 50-50 with its affiliate customers. Hagerman acknowledges that some affiliates will prefer to deal directly with merchants and earn higher referral fees, but he believes that most will prefer the much broader scope and ease-of-use that Affinia offers. Jupiter Communications estimates that 15 percent of affiliates are responsible for 85 percent of transactions, meaning that most affiliate sites simply don't generate enough revenue to make the percentages that meaningful. Hagerman notes that most non-commercial content sites are more concerned with serving their community than with maximizing revenue, and says Affinia can offer them a compelling solution.

Affinia vp of business development John McCrea suggests the company could be an attractive partner for LinkShare and Be Free, rather than a competitor, because its focus on affiliate sites complements the other networks' emphasis on merchants. Affinia could function as a "super-affiliate" that aggregated many small content sites, allowing the other intermediary to focus on managing transactions on the merchant side.

Underneath the content and the transactions, the Net is still a computing environment. As local applications migrate into the network, they mutate and combine into new and more valuable forms. Last month we examined one category of these new Net applications, which we dubbed "post-groupware." (See **Release 1.0**, 6-99). The deeper story is that syndicated access to dynamic objects and their capabilities will be built into the very fabric of Web-based applications.

This will represent a major shift in Web business relationships. In an affiliate situation, instead of clicking through to Amazon.com to make a purchase, users could simply complete the transaction (one-click ordering and all) on the affiliate site, with all the data passing directly into Amazon.com's systems. Or Ford could aggregate approved office supplies from Staples for purchase on its internal corporate "porthole" site (see **Release 1.0**, 2-99) without requiring complex integration on either end.

Whose app is it?

Distributed applications need standard mechanisms to talk to one another, which is where XML-RPC and WDDX come in. After all the battles involving OpenDoc, COM and CORBA (see **Release 1.0**, 5-94), it now seems likely that the foundations for universal distributed and componentized software will ultimately be XML and HTTP. And the tools for building and maintaining those applications will be precisely the syndication-based software and services we've been describing throughout this issue.

At a conceptual level, syndicating applications is no different from syndicating static content. Every local application has inputs and outputs, which take the form of booleans, strings, arrays and so forth. Just as content syndication moves text and images in standard formats between systems, application syndication moves data and objects.

For example, a customer authentication application running on one site and an order processing application elsewhere may both use the same information (name, address, credit card, etc.). However, applications generally aren't designed to send and receive that information in formats that can be transmitted easily over the Web. The problem gets worse when the applications are written in different development environments. A Java application won't understand data structures sent from a Perl script or ColdFusion application, for example, and vice versa. In theory, this problem could be addressed if all applications formatted their data and objects in a standard manner, but that's too much to ask.

Allaire's solution, embodied in WDDX (see page 8), is to use XML as a middleware layer that translates between different application formats. The applications on either end need not change, so long as developers write connectors that transform their data structures into the neutral WDDX format. Newer Web-centric applications such as Spectra can expose their native APIs in WDDX-compliant form, providing greater flexibility along with built-in roles-based security. In the next two months Wddx.org, the Allaire-supported open source community around WDDX, plans to release a Web syndication SDK with libraries, examples and documentation to help developers create Web APIs.

The more-ambitious XML-RPC approach (see page 8) allows applications on one server to directly call procedures on another server, passing parameters and returned values back and forth. UserLand's Frontier, which we discuss in the content syndication section (see page 15), offers some distributed computing functionality via XML-RPC, and ceo Dave Winer plans to go further in this direction. Allaire, by contrast, began as an application server vendor and has moved into areas such as content management and personalization. VerticalOne (see page 27) has built a proprietary solution to aggregate certain types of dynamic personal content into other Websites users frequent.

Buzzword city

Application syndication, distributed computing and enterprise application integration are all variations on the same theme. The syndication metaphor is particularly apt in the context of hosted applications, with application service providers (ASP) such as USinternetworking and Corio functioning as syndicators and their customers as affiliates.

The ASP market is rapidly emerging at the same time as approaches and standards to application syndication solidify. With many vendors and service providers in ostensibly different spaces, it may take time for the distributed computing model to gain traction. Whatever the path forward looks like, however, something powerful is gradually developing.

Allaire Spectra: more than a Tempest in a teapot

Allaire Software is well-known for its ColdFusion application server and HomeSite Web authoring tool. Co-founder and vp of technology strategy Jeremy Allaire spoke at this year's PC Forum about development and sales models for software companies in the Internet era (see **Release 1.0**, 3-99). When Allaire stopped by our office earlier this month, however, he had something different to describe: a new product code-named Tempest.

Tempest, officially known as Allaire Spectra, was formally announced on July 21 and will ship in the fourth quarter. The product represents Allaire's boldest effort to become a core platform for Website and Web business development, competing in the same space a BroadVision and Vignette. Running on top of ColdFusion and an integrated XML object database (see footnote 4), Spectra offers a suite of packaged functionality including content management; workflow and process automation; role-based security; personalization; decision support and last but not least, syndication. All these are tied to a consistent object model, the COAPI, and to a suite of user interface and presentation tools called the Allaire Webtop. Like UserLand's Manila (see page 16), Spectra offers browser-based authoring as a core element of its content-management features.

Not surprisingly, Spectra uses WDDX (see page 8) to exchange objects both inside a site and between applications running on different sites, though it also supports publish-and-subscribe relationships for static content via HTTP, FTP and SMTP. Jeremy Allaire feels that syndication (of both content and application functionality) shouldn't require special software or intermediaries, but should automatically "fall out" of a comprehensive content and commerce management platform. "Spectra was built from the

ground up to make syndication and managing syndication relationships a no-brainer," he says.

Spectra costs $7,495 per server, not including ColdFusion. Allaire will also sell a bundled offering including servers, tools, training, consulting and support for approximately $100,000.

VerticalOne: turning vertical into virtual

Atlanta-based startup VerticalOne doesn't label itself as a syndicator or distributed-computing enabler, but we know better. The company's service, which will launch August 2nd, is a perfect example of the power of syndicated access to dynamic applications over the Web. Long-term, the challenge for VerticalOne will be to offer value added when the basic application integration processes are commoditized through standards and through tools such as Allaire Spectra.

VerticalOne founder and ceo Gregg Freishtat previously was svp of Premier Technologies, an integrated communications technology vendor, and ceo of Telet Communications prior to its acquisition by Premier. He also served on the board of Relevant Knowledge and USA.Net. Freishtat says he became convinced that personalization was critical to building successful Internet-based services, but that it should span multiple sites and content types rather than being tied to a single portal. "We perceived a great need for an information infrastructure so that consumers don't have to go to 10 places with 10 different user IDs, passwords and interfaces to get a snapshot of their personal account information," he explains.

Large brick-and-mortar businesses such as banks are rapidly going online, but they often find themselves in a tug of war with portals and Web-based destination sites over who controls a customer. "We want a balance between the destination sites' interests and needs, and the brick-and-mortar companies' interests and needs," Freishtat says. VerticalOne's mission is to foster this balance (ideally making money in the process).

VerticalOne provides the infrastructure for users to view personalized, dynamic content, such as their bank balances, investments, rewards programs, credit card purchases and bills, syndicated onto an external site such as a portal. VerticalOne's back-end systems automatically crawl, mine and translate the user's data so that it can be presented on a personalized destination-site page, while maintaining security and privacy.

"Destination sites want to increase stickiness by providing their subscribers with information completely unique to them that they'll want to see on a daily basis," Freishtat explains. "The smarter destination sites understand that what they are doing is positioning themselves between their subscribers and their subscribers' existing longstanding commerce relationships." On the other hand, he continues, "brick-and-mortar companies have always enjoyed a linear, bi-directional relationship with their customers. There's a direct line between you and your institution. So when they all put up their Internet strategies, they assume that's what it's going to be."

The trouble is that on the Net users want everything in one place, which is why massive portals have been so successful. Freishtat uses BancOne as

an example: “The notion that the only way they can get the benefits and economies of an Internet strategy is to convince all 40 million of their customers to come to their Website is a little nutty. It’s not going to happen.” VerticalOne’s dynamic syndication approach gives these brick-and-mortar companies vastly greater reach, because they can connect with their offline customers whenever they interact with an affiliate site.

To avoid disintermediation, Freishtat says, “We very conscientiously limit the amount of information and the type of information that we present to a bank or any brick-and-mortar company user.” The goal is to keep users on the destination sites longer by eliminating the need to go elsewhere for routine access to personal data, while also driving traffic back to the brick-and-mortar company’s site for more detailed account information and to conduct transactions. VerticalOne’s secure data mining architecture generates hyperlinks that transport users directly to the appropriate page on the brick-and-mortar company’s site already logged in.

VerticalOne also plans to generate revenue by splitting advertising or user fees with destination sites, taking a cut when a brick-and-mortar company signs up a user to its Web-based service and being paid for the high-quality traffic it sends to the brick-and-mortar sites. Freishtat says the company is now in talks with four of the six largest US banks, and expects to have seven to eight partners on board when it launches next month. The company, which currently has 65 employees, received $12 million in funding in late May from Flatiron Partners, Chase Capital Partners, Kinetic Ventures and TTC Ventures.

OF MEDIA AND MEDIATORS

For all the talk of disintermediation, technology has actually allowed the distance between creators and consumers to grow over time. Before the industrial revolution craftspeople sold their goods directly. Then wholesalers and retailers came along. Multi-tiered distribution channels in commerce and syndication deals in broadcasting both imposed still more layers, but they worked because they created value for everyone involved. This trend has continued online. Even as manufacturers use the Net to touch consumers directly, portals interject themselves between retailers and their customers.

The true hallmark of the Net is not disintermediation but choice. With syndication, any information can be anywhere, because the link between creation and distribution is broken. There will be many possible paths between companies and their audiences. Many of these paths will exist simultaneously. The great opportunity for technology and service providers lies in navigating the tangle, taking advantage of the best distribution chain for a given customer at a given moment.

It’s all about control of the platform

The first phase of Internet development was the “build it yourself” era. Pioneering companies such as Yahoo!, Amazon.com, CNet and eBay created Websites and their supporting systems from scratch. They had to figure out how to process orders, build dynamic sites, implement content partner-

ships, develop user profiles, handle security and more at scales no one had ever attempted.

The next phase is for those functions to become automated, first through proprietary software toolkits and eventually through open standards that delineate the connections between value-adding components. For example, Inktomi now offers search functionality, which the first-generation portals had to build from scratch, to anyone willing to pay. Similarly, software from 1999 PC Forum debutante Blue Martini allows any online retailer to employ sophisticated dynamic merchandising techniques (see **Release 1.0**, 3-99).

The Net is evolving in this manner because custom solutions can't scale in the face of hypergrowth, and also because technologies in competitive markets naturally commoditize themselves over time. Someone can always reverse-engineer a technology, especially with computing power continually increasing, and at the end of the day customer-facing companies such as Excite@Home and eToys would rather focus on their core businesses than on software development.

The hard part is moving from horizontal but proprietary solutions to standards-based components. Most players want to capture as much of the market as they can. There's always a desire to see everyone else as the commodity part of the equation, while you dominate the one link in the chain that generates substantial margin.

The PC software industry went through the same evolution. (Remember OpenDoc vs. OLE?) Efforts to standardize inter-application linkages through component architectures began running out of gas just as the Web began to emerge as a bright shining alternative. The Net is now approaching the critical point of automation and standardization of dynamic relationships, and the development paths of syndication business models will be the key indicators of how this transition plays out.

COMING SOON

- *Annotation servers.*
- *Broadband video programming.*
- *Business-to-business transaction engines.*
- *How big companies innovate.*
- *The Net in the educational process.*
- *And much more... (If you know of any good examples of the categories listed above, please let us know.)*

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Release 1.0 Calendar

1999

August 17-19	**Jupiter Online Advertising Forum** - New York, NY. The pot keeps getting bigger but clickthrough rates keep getting smaller. For info call (800) 611-1693; www.jup.com/events/forums/advertising.
August 21-24	**Open Source Software Convention** - Monterey, CA. Organized by O'Reilley & Associates. Over 120 presentations including keynotes from Guy Kawasaki and Bill Joy. To register call (888) 844-7024; conferences.oreilly.com.
August 24-26	***ICANN Open Meeting** - Santiago, Chile. Come hear about developments in domain-name policy and other Net-platform issues. For info, see www.icann.org.
September 13-17	**Networld+Interop** - Atlanta, GA. See the latest gear to help the Net (or your enterprise network) get bigger and faster. To register call (888) 886-4057; fax, (781) 449-2674; www.zdevents.com/interop.
September 25-27	**#Telecommunications Policy Roundtable Conference** - Alexandria, VA. The premier event for telecom policy wonks. For details, contact Dawn Higgins, (202) 452-9033; e-mail tprc@ei.com; www.si.umich.edu/~prie/tprc.
September 27-30	**#Fall Voice on the Net** - Atlanta, GA. Pulver.com brings together the Internet telephony community. Call (516) 547-0800; fax, (516) 396-7870; www.pulver.com.
October 3-6	**Agent Systems and Applications/Mobile Agents '99** - Palm Springs, CA. Featuring the Third Dartmouth Workshop on Transportable Agents. Experimental research on agent technologies. For information e-mail Robert Gray, robert.s.gray@dartmouth.edu; www.genmagic.com/asa.
October 10-17	**Telecom 99 +_ Interactive 99** - Geneva, Switzerland. The International Telecommunications Union's massive trade show. Call +41 (22) 730-6161; fax, +41 (22) 730-6444; e-mail telecom99@itu.int; www.itu.int/telecom.
October 24-26	****EDventure's Tenth Annual High-Tech Forum** - Budapest, Hungary. Call Daphne Kis, (212) 924-8800; fax, (212) 924-0240; daphne@edventure.com; www.edventure.com.
Nov 30 - Dec 2	*#***IIR's ISP** Forum - Amsterdam, Netherlands. Europe's primary annual forum for internet service provision and convergence platforms. 158 speakers from 38 countries, including Esther Dyson and Kevin Werbach.
December 31	**Fin de siecle.**

** Events Esther plans to attend. # Events Kevin plans to attend.*

Lack of a symbol is no indication of lack of merit.
The full, current calendar is available on our Website, www.edventure.com. Please contact Joanna Douglas (joanna@edventure.com) to let us know about other events we should include.

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