THE NEXT MEDIUM
By Kevin Werbach

The Internet is the next mass medium, but with a significant difference: The medium will be mass but the content and the audiences will be fragmented and dynamic. The Net will become as significant an entertainment vehicle as television, film or radio. Yet it will differ from all of them, as they differ from each other.

The next medium is evolving its own business arrangements, usage patterns and social dynamics. Where established media are packaged and programmed into well-defined distribution channels, the next medium will thrive on personal feedback loops and boundary blurring. The important question isn't whether the PC will replace or coexist with the TV. The services delivered through those and other devices will define the next medium. Though Release 1.0 usually focuses on business applications of technology, consumer mass media are powerful shapers of both user expectations and the economic landscape that should not be ignored.

The next medium isn't here yet. Many of the precursors exist, though they have not yet achieved the scale and integration necessary to influence popular culture at the level of TV and film. The details of the services that will dominate Internet-based media can't be predicted with confidence, because they must develop over time in response to consumer preferences and technological capabilities. Still, things are far enough along to glimpse the outlines and profile some of the pioneers.

It wasn't supposed to happen this way. The vast media conglomerates and the operators of the world's communications networks saw their future more than a decade ago, coalescing around the notion of an information superhighway that would deliver, among other things, interactive television and on-demand movies (enhanced by advertising, of course). Far, far away in spirit but at the same time, researchers and academics were building the Internet to foster global interchange of information. Somewhere along the way the two parallel lines met, and strangely enough, the Internet approach won. 

PC FORUM INVITATIONS ENCLOSED!!!
For all its influence and scale, though, today's Net doesn't yet offer a mature passive-entertainment media experience. The most popular Internet activities are informational or transactional: sending e-mail, shopping, viewing stock quotes. Dot-com startups that want to reach a mass audience for rapid brand-building choose radio spots and pricey Superbowl commercials, because no online advertising vehicle compares in reach. Yahoo! calls itself a global media company, rather than a portal (see Release 1.0, 3-99), but though it uses a media business model -- advertising-supported "free" content -- the products and services it delivers tend to be information and utilities rather than entertainment.

Yahoo! and most content-oriented Websites are media properties in the sense of The New York Times, Newsweek, CNN or a talk radio station. But they aren't entertainment programming vehicles along the lines of Disney, Time-Warner or NBC. The established media companies have all tried to bring their content and business experience to the Net, though with famously limited success.

The Net as an entertainment platform

The Web offers entertainment in various forms, including interactive games, sites tied to existing movies or TV shows, syndicated cartoons and contests. Yet few of the entertainment sites center on original, Internet-delivered content. Early efforts such as The Spot, a Web-based soap opera using text and static images, sought to create a new form of episodic entertainment on the Web. However, none of these projects could make the business model work. Limitations on bandwidth and client software prevented the use of full-motion video, greatly restricting the richness of the experience.

Some argue the Net isn't an entertainment platform at all -- it's an information-gathering and communications environment, plain and simple. This line of thinking holds that the Internet will support richer graphics and sound, while interactive features will make their way into television and radio, but the two worlds will remain separate.

We beg to differ. Entertainment programming is part of the manifest destiny of the Net, for the same reason that Willie Sutton robbed banks: that's where the money is. Visual entertainment is a huge business because viewers are willing to pay for it, and because advertisers will pay to reach those viewers. Consumers will gladly use the Internet to engage in e-commerce, chat, build homepages and search for information, but they will also respond to the emotional and social appeal of entertainment as they have in every other context.

The Blair Witch Project, which rocketed to box-office success thanks largely to its Internet-based guerrilla marketing campaign, may represent

\[1\] A survey released last week by the Myers Group, a market research firm focused on the media industry, illustrates the need for distinctions in the current fragmented environment. The study found that AOL had surpassed major established companies such as NBC and Fox as a media brand. On the other hand, the top two brands according to the study were The Weather Channel and the Discovery Channel, certainly trusted and successful but hardly as influential as any broadcast network.
a turning point. *Blair Witch* played in theaters, but its creators supplemented the storyline with original content on the Web, generating tremendous buzz before and after the movie opened.

Entertainment is the ultimate viral application, because people love to talk about what they see. As more high-quality entertainment content is developed for the Net, the kinds of feedback loops that propelled *The Blair Witch Project* will become even more powerful. It's only a matter of time before a *Blair Witch*-level frenzy erupts around a piece of Internet-originated content.

The existing uses of the Net won't go away. Just as telephones support both communications and commerce, the Net will simultaneously function as a shopping mall, a newsstand, a movie theater and more. In fact, many of those functions will be wrapped together through new hybrids of content and commerce (see below on page 12 and 15 for some examples).

There remains of course the problem of -- as the VCs put it -- getting the dogs to eat the dog food. Saying that passive-entertainment programming will succeed online doesn't mean that any specific provider will attract an audience or develop a workable business model. The companies described beginning on page 9 all have creative ideas, good financial backing and other assets. However, most haven't actually launched, so it's difficult to judge the quality of the end-product. And the younger audience most likely to watch Internet-based video programming is notoriously fickle. Getting them to respond to something new is a difficult exercise, but will be rewarding to those succeed.

**THE MESSAGE OF THE NEXT MEDIUM**

All media reflect the technology platforms they use. In general, the Net is open rather than closed, interactive rather than passive, integrated rather than separated, user-defined rather than pre-programmed, distributed rather than centralized, rough-edged rather than polished and personalized rather than undifferentiated. The next medium will reflect these characteristics, even though some of them cut against the central tenets of established media.

What's next is new

We choose the term “next medium” because existing phrases such as “new media” and “multimedia” carry too much baggage. Both have become catchalls for any form of media that involves interactivity or some combination of different content types. “New media” in particular is increasingly used for all Internet-delivered content. We're after something more limited.

By “next medium” we mean content designed primarily to entertain or otherwise generate an emotional response, organized through a commercial delivery process. In other words, the native forms of entertainment content on the Net. Recorded music, in the form of MP3 downloads or other mechanisms, fits this definition, but it has its own complicated dynamics. For now we're focusing on predominantly visual content (possibly including audio components).
Everything from sports coverage to short animated films to serial live-action dramas will be delivered over the Internet protocol infrastructure. All of these will be pieces of the next medium, but only pieces.

Just as video tapes didn't kill movies and TV didn't kill radio, the next medium won't sound the death knell of all existing media. The Net will force them to adapt and reconstitute themselves into new niches, but the next medium will eventually go its own way rather than merely map to the parameters of legacy environments.

The eyeball dilemma

Most media deliver highly packaged programming to huge, undifferentiated audiences. The Net, in contrast, excels at one-to-one communication based on constant feedback loops (see Release 1.0, 9-98). As we discuss on page 10, this poses a dilemma, because the economics of most media and the advertising that underpins them fail for extreme narrowcasting.

Still, there is no doubt that Internet-based entertainment will be more fragmented and user-defined than what has come before. As Broadcast.com founder and now Yahoo! vp of broadcast services Mark Cuban (see Release 1.0, 3-99) observes, “All you have to do is look at what cable has done to network TV. The more choices you have, the more you get to choose exactly what you want to the exclusion of traditional programming.”

Scarcities and boundaries, so powerful in shaping existing media, are anathema to the fundamental architecture of the Net. Broadcast TV, radio and cable offer up a limited menu of choices due to technical constraints on channel capacity. So long as those who control the last-mile communications infrastructure don't constrain broadband applications in their quest for vertical integration (see Release 1.0, 2-99), the next medium will be open to anyone able to build distribution infrastructure and the audience to feed it.

The next medium will be interactive at its core, with viewers shaping the aggregation of programs and channels they receive through their explicit preferences or implicit usage patterns. Next-medium programming services will also allow viewers to communicate with each other and to engage directly in purchase transactions flowing out of the entertainment experience. Interactivity can be bolted onto television (see page 14, below), thereby providing additional services that consumers value, but the result is still television.

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2 The notion of "convergence" is somewhat misleading here. From a technical standpoint, communications media have been “converged” for some time. With a few minor exceptions, including the endpoints of communications networks such as the telephone and television, all mass media are already converged into digital bits. But from a programming standpoint, the various media differ greatly. Viewers have gotten used to the structures of existing programming forms, such as the half-hour situation comedy and the theatrical-release film. The next medium will evolve unique conventions about visual style, length, periodicity and so forth.
Getting with the program

There are limits to this interactivity and choice. The media experience involves surrendering some degree of control to the professional storyteller, rather than clicking through a maze of options from beginning to end. As Cuban notes, aggregation sites such as Broadcast.com, which makes available thousands of audio and video streams, offer the rewarding experience of a good public library -- "so much stuff you are awed and you just walk through the stacks until you find what you want." Users tire of this fairly soon, however. While they always want the option of wandering unhindered through the library, most want their entertainment packaged for them.

The question going forward is what these formats will looks like. Companies such as DEN, Pseudo, Spunky Productions and Centerseat (see pages 9-14) are producing Internet-based "shows" analogous to television programs, except that viewers can see them at any time and the content is melded with interactive and commerce features. AtomFilms (see page 13) evaluates short films on quality but lets users choose among the ones it selects. On2.com (see page 10) builds content around other content, such as movie trailers. Iz.com (see page 15) will mix and match youth-oriented programming in half-hour blocks on television, linked to a Website for commerce and community functions.³

Cuban sees more of a bottom-up evolution, with user-generated "playlists" evolving into channels as people pick the "programmers" they respect. Companies such as UStreamit offer users tools and hosting space for their streaming media content, similar to the Geocities "free home page" model, though they haven't yet moved to the programming or packaging level. iCast (see page 16) hopes to blur the lines between packaged and user-created media, but within a large well-integrated network of sites.

The business of media

In addition to being a creative and informational phenomenon, entertainment is a business. In fact, it's several very big businesses, which have developed their own terminology, standard practices and financial relationships. The same will be true of the next medium.

Visual-media businesses rely on three sources for revenues: viewers, companies that want to reach those viewers and other media outlets. Some existing media such as television offer content to viewers for "free" because networks can derive large-enough revenues from advertising and syndication of programming to cable networks, foreign distributors and others (see Release 1.0, 7/8-99). Cable, though delivering similar con-

³ Though we think these are among the most interesting companies in the space, this list is by no means exhaustive. Services such as Intertainer are trying to resurrect the video-on-demand model that Time-Warner and others abandoned several years ago. Geocast and Skystream hope to create new interactive broadband video programming using satellite distribution. Companies such as Wirebreak, Honkworm, Load Media and BitMagic offering regular helpings of short streaming entertainment content in the tradition of comic strips or "daily joke" e-mail lists. Others such as MeTV and iFuse have announced their existence but little else.
tents, also charges subscription fees to users and derives revenue from deals between networks and local operators.

Movies have a commercial structure similar to cable's, though product promotions and marketing tie-ins represent an increasing share of revenues. Such transactional revenue streams generally haven't been significant for home media, largely because most programming other than home shopping doesn't have a direct connection to commerce. That may change with Internet-based media, where contextual e-commerce can always be just a click away from any program (see, for example, Centerseat, page 12).4

Usage data represent another revenue stream that may evolve differently on the Net from traditional media. Networks pay services such as A.C. Nielsen to measure and report on viewership levels. But the Net makes it possible for media-packagers themselves to monitor usage patterns, and potentially to sell that information to marketers and others. There are of course privacy and reliability issues to be addressed. The need for independent measurement organizations won't go away, but Internet-based media companies will be in the best position to assess usage patterns on their own sites and to use that information to target content, advertising and e-commerce opportunities.

The final business aspect of the next medium concerns the relationship of content to hardware. Consumers take it for granted that they must pay up-front for modems but receive cable set-top boxes bundled into their monthly subscription fees, though both devices serve similar functions. With the growth of companies such as PeoplePC, Centerbeam and Internet Appliance Network that view PCs and other devices primarily as delivery vehicles for services, we're about to witness a new level of experimentation in pricing models. Decisions about how hardware and content are bundled and priced will affect not only the end-user perception of the service package, but the business deals among participating companies.

INFRASTRUCTURE: MAKING THE NETWORK WORK

The evolution of online media will be strongly affected by the infrastructure supporting it. Dial-up connections, limited to 56 kilobits per second, simply can't support large, high-quality video streams. A small jerky window in one corner of the screen can't deliver the same experience as a full-screen color television. Thus, the faster speeds available through cable modem or DSL services will give a significant boost to "next medium" services.

The core of the network must also evolve to support large numbers of rich-media streams. Companies such as Inktomi, Akamai and Sandpiper (which just merged with Digital Island; see Release 1.0, 6-98) are developing distributed caching and content-delivery services that bring con-

4 Veon, a vendor of broadband video production and delivery systems which has inked distribution deals for its player software with AOL and Excite@Home, allows programmers to embed commerce directly into the video stream. Viewers can click on products they see on the screen and be taken immediately to an order form or promotional site.
US regulatory issues

Television and radio broadcasters have been regulated in the US from their inception, because they use government-licensed finite electromagnetic spectrum and beam uninvited into people’s homes and cars. These rules range from structural limits on ownership of stations and programming to content rules such as the restrictions on indecency and the mandates governing political advertising.

Up to now the US Federal Communications Commission and most other regulators have treated the Net as a communications platform like the telephone, rather than as a broadcast medium. One result has been government non-intervention, especially in the US where “enhanced communications services” are largely unregulated. As the Net increasingly becomes a vehicle for streaming audio and video as well as downloadable music and movies, that could change.

The communications laws, written well before the Net came into being, define broadcasting in very general terms. As MP3-encoded music and online video programming begin to compete directly with record labels and broadcast networks, the established industries may push to have their new competitors subject to the full gamut of regulatory requirements. FCC chairman Bill Kennard has described this as “regulatory capitalism,” where companies try to impose regulation on their competitors or at least twist the regulations to suit themselves.

Pending federal legislation enabling direct-broadcast satellite services to transmit local television programming, for example, expressly precludes online services from receiving such “compulsory licenses.”

The cable industry in the US has been arguing that its Internet access services fall within the same legal category as its traditional video services, in order to avoid having them regulated like telephone services (see Release 1.0, 2-99). In so doing, it may unwittingly lay the groundwork for subjecting itself to broadcast rules.

Many requirements designed for television networks simply make no sense for Web-based media services. Still, those developing new entertainment-oriented services should not ignore the possibility of regulatory “friction” in the near future.

content closer to users, rather than having it flow across the Internet backbone with uncertain quality of service. IP-multicast technology ensures that identical, simultaneous streams aren’t duplicated within the network, limiting bandwidth requirements for certain types of content.

Companies such as Clearband, Pixelon and Duck (see On2.com, page 10) have developed compression algorithms to deliver full-screen live-action video over the Net at relatively low bandwidths. Dial-up speeds are still too slow to deliver video in real-time, though companies such as Load Media are trying to overcome that limitation with downloadable short video content. The lower bound for decent-quality video is now around 300 to 600 kilobits per second, within the range of consumer broadband services over both cable and DSL, and far below the multi-megabit speeds that used to be required.
Equipment inside the home will also be important for Internet-based media. Already, digital video recorders (DVRs) from TiVo and Replay have created a stir in the broadcast industry by allowing consumers to download their favorite shows automatically, organize programming by preferences rather than network lineups and use VCR-like fast-forward and rewind tools as they watch.

The major broadcast industry players (as well as Internet leaders such as AOL and Amazon.com) have responded by investing in one or the other of the companies, fanning interest in the technology. A new generation of consumer Internet appliances from WebTV, AOL and others will likely incorporate similar functions, with competition spurring more innovation.

DVRs are only the first consumer appliances to begin reshaping the visual media experience. These boxes get their programming today from broadcast or cable television, using a telephone connection to download program guides and other information. As DVRs are integrated with broadband access services, either as standalone devices or combined into "residential gateways" that mediate services over the broadband pipe, the situation will become more interesting. Television content isn't designed for the control and interactivity of devices such as Replay and Tivo. Also, consumers can use the DVRs to fast-forward past commercials, which undermines the economics of broadcasting.

Consumer devices will have to overcome the limitations of the PC as an entertainment device. Watching streaming-video content on a monitor while sitting at a desk simply isn't the same experience as lying on a couch watching a TV (let alone sitting in a darkened theater looking at a giant movie screen).

Some entertainment content will be delivered to PCs, but most users will feel more comfortable in other environments. With new set-top boxes, Internet appliances and digital broadcasting, the TV may turn into the primary box that delivers Internet-based entertainment along with existing forms of programming. The boxes themselves, however, are less important than the nature of the content and the usage patterns they engender.

The two-stage rocket

The next medium will eventually take advantage of cheap, ubiquitous broadband connectivity, supporting video quality superior to conventional television along with deep interactivity and personalization. However, the infrastructure to support this vision doesn't yet exist. It will be several years before a majority of Internet users in the US have residential access faster than dial-up.

Internet-based media will therefore emerge in two phases. First, providers will use clever tricks to generate an entertainment experience for dial-up users. This isn't as great a challenge as it may seem. Though analog dial-up connections are still the norm, the average user has gone from a 14.4-kbps modem in the early days of the commercial Net to 56 kbps today. PCs are many times faster, with far larger hard drives capable of caching media files. Compression and encoding technologies have evolved to allow far more robust transmission quality over low-bitrate connections. Client software such as RealNetworks' RealPlayer for streaming media and Macromedia's Flash animation plug-in are
installed on most users’ systems. The middle of the network has wit-
nessed developments in data centers, caching, multicasting and distrib-
uted content delivery.

As a result, it’s now possible to talk about the Internet as a media
platform even though the bandwidth isn’t available for most consumers to
enjoy a full-fledged interactive broadband experience. As that bandwidth
becomes available, however, consumers will expect full-scale, immersive
entertainment. Media-oriented services thus face a dilemma: They can’t
assume customers have high-speed connections, but they also can’t afford
to tie their systems to the limitations of existing narrowband networks.
What works today will be an outdated legacy system tomorrow.

Online entertainment programmers must therefore design their content to
be scalable both up and down in quality. Today’s services will provide
useful information about how consumers experience and interact with
Internet-based entertainment services, and will give content providers an
opportunity to scale up their infrastructure and build audiences.

BROADBAND VIDEO PROGRAMMING

A number of companies are trying to get the jump on the broadband video
content space by rolling out original programming today. At one end of
the spectrum, Yahoo! Broadcast.com offers hundreds of live streaming con-
tent feeds and an extensive library of downloadable repurposed video con-
tent such as sporting events, films and news footage. Rather than spend
money up-front to create new programming, Broadcast.com focuses on scal-
ing its back-end hosting infrastructure (see Release 1.0, 3-99).

Taking the opposite tack, companies such as New York-based Pseudo.com and
Santa Monica-based Digital Entertainment Network (DEN) are creating orig-
inal programming entirely for distribution over the Net. Pseudo, started
by Jupiter Communications founder Josh Harris, takes a low-end approach,
offering dozens of channels of live in-studio talk shows and other inex-
pensive programming. DEN’s shows, though still cheaper than broadcast
television programs, use professional actors and established directors --
one reason the company had a net loss of $20 million during the first
half of this year. It currently offers 13 original shows streamed over
the Net into quarter-screen windows, with several more in development.

DEN has attracted an experienced cast of Hollywood executives and produc-
ers, including president David Neuman (former president of Disney
Television) and ceo Jim Ritts (a founder of in-classroom programming
service Channel One), along with cto Greg Carpenter, who previously head-
ed the marketing group for Windows Media Player at Microsoft. It has
signed up Ford, Pennzoil, Pepsi, Dell and Blockbuster as charter adver-
tising sponsors. In September DEN filed to raise $75 million in an IPO.
The offering hasn’t yet taken place, allegedly due in part to investor
concern about the company’s spendthrift ways.

Both DEN and Pseudo focus most of their shows on the teenage and twenty-
something markets, with heavy doses of niche programming targeted at par-
ticular ethnic groups, extreme sports, and so forth. Such narrowcasting
means that these services offer plenty of programming not likely to be found on broadcast or cable television. On the other hand, the fragmentation of content makes it more difficult to bring together a substantial audience for any one show. DEN executives claim a breakeven point around 50,000 viewers per show, infinitesimal by network standards but still a large number for Internet-based media, especially considering that fewer than 2 million households in the US even subscribe to broadband services.

The two companies vividly illustrate the dilemma broadband video content services face. Like most VC-funded Internet companies, they can afford to lose money for some time as they build up their customer bases. The danger is that revenues will never catch up with expenses. Acquiring eyeballs costs money as with any other site, but providing fresh content to put in front of those eyeballs means paying actors, producers, writers and editors each time. The overheads of quality production keep costs from scaling down much even when audiences (and thus revenues) are small.

TV networks overcome their (much larger) production costs because they can drive massive audiences, and a few hits such as ER or Seinfeld more than make up for the flops (especially with back-end revenue from syndication; see Release 1.0, 7/8-99). Targeted programming can succeed with smaller audiences because advertisers will pay more for access to a focused group of consumers, especially in attractive demographic categories. But at some point narrowcasting will generate diminishing returns, especially since viewers have come to expect high-cost production values. The question is where that cutoff point kicks in...or whether it's possible to change the economics, as some of the companies below hope to do.

Rather than create programming themselves, some broadband video content providers are aggregating and filtering content developed by others, or wrapping existing and original content into their own environment. On2.com and Centerseat are among the pioneers; AtomFilms and Spunky Productions offer variations on the model by focusing on more-specific content forms.

On2.com

On2.com has been developing software-based video products since its founding in 1992 as the Duck Corporation, and has licensed its technology to major companies including Microsoft and Sega. Its newest technology, the TrueMotion VP3 platform, uses proprietary video-compression algorithms to deliver television-quality video over the Internet. The company, based in New York City, now has 75 employees. Investors include Travelers Group, Edelson Technology Fund and Wit Capital ceo Bob Lessin (see Release 1.0, 3-99).

Though technology such as TrueMotion VP3 will be important to delivering high-quality broadband video services, On2.com's executives recognized that such technology has limited value without content and an audience to take advantage of it. On2 founder and ceo Dan Miller says he concluded that, with residential broadband services ramping up, the best way to seed his company's technology into the market (and to enjoy more of the upside than a software license model offers) was to expand into content development and business services.
So Duck transformed itself into On2.com. The business-model shift created additional liquidity requirements, so in June, the company merged with a shell corporation to capitalize On2.com as a publicly-traded entity.

On2.com uses the TrueMotion VP3 video-compression technology to deliver full-screen, TV-quality video programming over the Internet to broadband customers. The service operates at as low as 300 kilobits per second, well within the range of consumer-level broadband services over both cable and DSL. The company has developed a turnkey system for encoding and delivering video content, including profiling, ad serving and other features. In addition to the software components, On2.com has built out

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**Spunky Productions: cartoons for the Web**

Not all visual media content is live-action. Animation has been a popular form of entertainment since Walt Disney started his company in the early years of the 20th century, and with shows such as *The Simpsons* and *South Park* it has become a major force in television beyond the traditional children's audience. With live-action programming requiring greater bandwidth and production expenses, why not use the Web to deliver high-quality animation?

Macromedia's Flash 4 browser plug-in supports sophisticated effects while allowing animation files to stream efficiently over low-bandwidth connections. Flash is bundled with major browsers, meaning that most Internet users now have it installed. Many sites use Flash to create animated teasers or ancillary content, but Spunky Productions is among the first to make Flash-based animation its primary product. Not the last, though: Legendary comic book creator Stan Lee plans to launch a Website offering 5-minute animated superhero cartoons in the near future.

Spunky, located in San Francisco, was founded in September 1998. Members of its team, however, have been active developing Internet content since 1995, when they created Claus.com, one of the most popular Christmas-themed sites. The company was founded by the three Kronenberger brothers: Karl, who serves as president; Craig, who is chief creative officer; and Paul, who serves as cto. In addition to updating Claus.com and creating a companion, Scary.com, for Halloween, Spunky recently launched a dozen original Web-based cartoon pilots. The programs are split between content for 6-to-12-year-olds and for children 13 and over.

Spunky Productions has a team of professional animators on staff, and since animated content generally costs less than live action to produce, it will be able to premiere a new cartoon every four days. It will offer the cartoons both on its own site, SpunkyTown.com, and elsewhere through syndication deals.

Spunky executives see the site also becoming a "cartoon incubator," with hit cartoons making their way to television. It should be much more cost-effective to find the cartoons that kids enjoy by trying out many possibilities on the Web, rather than launching a cartoon series from scratch on television.
peering and collocation relationships to deliver its content reliably over the Net, and it is talking to content distribution and broadband access providers about partnerships to further push content out to the edges of the network.

On2.com plans four Web-based offerings, which it calls channels, as the initial elements of its broadband network: On2Movies, On2Travel, On2Music and On2Games. The first channel, On2Movies, will launch in December, with the others following next year. In addition to producing its own original content, On2.com is incorporating supporting content from partners including movie studios (which supply material such as trailers) and AtomFilms (see page 13).

The On2Movies channel welcomes viewers with a video host, who introduces and discusses content; an accompanying side window shows contextually relevant links and other related information. The service includes “virtual VCR” functionality, allowing users to pause, fast-forward and rewind the video at any point. On2 uses an XML-based metadata format, similar to the synchronized multimedia integration language (SMIL) standard championed by RealNetworks, to associate information with the streaming content. A brief commercial runs before each movie clip.

In addition to advertising sales and e-commerce, On2.com hopes to license its turnkey system and/or hosting capacity on its existing platform to other content creators, though always with some On2.com branding. “We really think there's value in us being known to the end user,” says Miller, pointing to other entertainment technology companies such as Dolby, Panavision and Kodak that have built successful consumer brands.

Centerseat

Centerseat co-founder and CEO Scott Harmolin describes his company’s goal as “using the Internet as a medium for the distribution of entertainment and information in a way that hasn't been done before, and utilizing the properties of the Internet as a medium in a way that hasn't been done before.” Harmolin and co-founder Lee Haddad both came from Icon CMT, a New York-based ISP and professional services vendor that Harmolin co-founded in 1991. Icon was acquired by Qwest in September 1998.

Centerseat will launch in January with 200 shows developed for the Net. The company is both acquiring existing video programming and creating new content itself. It has already acquired the rights to over 25,000 hours of TV-quality programming, ranging from classic television (20,000 titles licensed from a single collector) to independent films.

Harmolin believes that Centerseat’s value proposition will be derived from the integration of personalized ancillary content, including commerce, with the core advertising-supported video programming. “The Internet as an advertising-only medium is pretty immature when it comes to justifying the orders of magnitude of compensation that artists in other media are used to,” he explains. “We incorporate e-commerce in a contextual way into the presentation as an additional revenue driver over and above advertising.”

The commerce links will be personalized to individual viewers, so that during a car-chase scene, for example, an automobile aficionado will see
specifications of the hero's car while a travel fan will see maps and other information about the city where the chase is taking place. Thanks to this ancillary material, which is being woven into both the original Centerseat-produced material and licensed content, Harmolin promises a “total immersion experience” for viewers.

Centerseat is developing a large number of channels geared towards specific niche demographics, such as kids, book-lovers, computer gamers and college students. Harmolin says the company has spent only about $2 million developing its initial shows; in contrast DEN has burned more than $20 million in six months to make only 13 shows. He attributes this efficiency in part to Centerseat’s internal media asset management platform, built by integrating off-the-shelf tools into a proprietary system.

Despite the low cost, Harmolin asserts that the company will offer professional-quality programs. In May Centerseat acquired Second Coming

AtomFilms: betting that shorts will be sweet

AtomFilms, based in Seattle, WA, was founded in October 1998 by Mika Salmi, formerly director of business development at Getty Images and before that an executive at Real Networks and two record companies. Investors include Warner Brothers Online, employees of Allen & Company and Frank Biondi, former ceo of Universal and Viacom.

AtomFilms distributes short entertainment (under 10 minutes) including films, animation and other forms of digital media via the Web. It licenses content from the artists who produce it, then seeks distribution both through its Website and in traditional media outlets such as television, airline video screens and theaters.

The company, which launched its site in March, screens hundreds of submissions and selects only a handful, serving the quality-filtering role that networks and Hollywood studios have historically played. AtomFilms has partnerships to supply content to numerous online and offline entertainment distribution companies, including Snap.com, RealNetworks, On2.com (see page 10), HBO, the Sundance Channel, Continental Airlines, Excite@Home and the Go Network.

Salmi, who admits a long-standing personal love of shorts, sees them as a distinct form of entertainment, rather than just a concession to bandwidth and screen limitations that make long-form entertainment less viable on the Net. He sees short entertainment as a perfect fit for alternate distribution platforms, such as handheld Internet access devices and cars, in addition to the Web.

Salmi admits he doesn’t know exactly how users will want to experience the content AtomFilms provides. Consequently, the company is experimenting broadly, incorporating both downloadable and streaming content, animated and live-action shorts and various organizing mechanisms such as daily picks and viewer rating. So far, usage divides along the familiar bell curve, with a small number of shorts receiving the lion’s share of the traffic, though every day 80 percent of the shorts on AtomFilms’ site are downloaded at least once.

specifications of the hero's car while a travel fan will see maps and other information about the city where the chase is taking place. Thanks to this ancillary material, which is being woven into both the original Centerseat-produced material and licensed content, Harmolin promises a “total immersion experience” for viewers.

Centerseat is developing a large number of channels geared towards specific niche demographics, such as kids, book-lovers, computer gamers and college students. Harmolin says the company has spent only about $2 million developing its initial shows; in contrast DEN has burned more than $20 million in six months to make only 13 shows. He attributes this efficiency in part to Centerseat’s internal media asset management platform, built by integrating off-the-shelf tools into a proprietary system.

Despite the low cost, Harmolin asserts that the company will offer professional-quality programs. In May Centerseat acquired Second Coming

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Productions, a New York-based film and video production house, and in October it announced the hiring of several broadcast television veterans including former CNN and NBC correspondent Mary Alice Williams and executives from CBS, ABC and Reuters. Centerseat plans to offer its programming to small and independent television stations, primarily as a promotional mechanism to drive traffic to its Website.

Harmolin argues that Centerseat's use of personalization for ancillary content allows the company to benefit from targeting narrow audiences while still enjoying the advantages of viewer aggregation. "With the same program we can create an experience that many people will share, but they will share it in a personal way," he says. The video stream may be identical across many viewers but the experience will differ based on the personalized e-commerce and informational resources around it.

Centerseat designs its programming to be scalable for delivery through interactive television set-top boxes when they become widely available. Harmolin, though calling video programming the "killer app for broadband to the home," says that Centerseat's heavy use of contextual information in addition to video streams means that its service will be attractive even for consumers who have only dial-up connections to the Internet. Centerseat will offer an "upgrade to broadband" button on its Website so that viewers can connect to a cable-modem or DSL service provider to enhance their experience.

HYBRID SERVICES

Unless you count changing the channel, television has always been a passive medium. There are now many situations in which viewers respond to what they see on TV by using their telephone, with the results updated live on the TV program -- think about home shopping and polls, for example. Cable operators have begun offering limited ability to interact directly through the cable box in the form of pay-per-view program ordering and electronic program guides, though none of these affect the content of the core video programming service.

For well over a decade, interactive television has been seen as a holy grail, a way to combine the mass scope of broadcasting with the lucrative subscription and transaction revenue models of commerce. With continually increasing processing power in set-top boxes and the promise of increased bandwidth through cable network upgrades and digital television broadcasting, adding interactive features to the TV experience is becoming more feasible. Companies such as OpenTV, Liberate (formerly Network Computer, Inc., see Release 1.0, 3-99), Wink and WebTV have developed software to power either set-tops or standalone Internet access boxes that offer supplemental information, e-mail and Web surfing and other interactive features.

As a means to bring Internet-based content and services to a broader audience, without requiring a PC or dial-up ISP, these systems make sense. WebTV, though branded a failure since Microsoft purchased it in 1997, has quietly acquired over 800,000 subscribers. The next generation of set-top boxes, now being built to the specifications of the cable industry, will further increase the penetration levels for such services.
Interactive television can improve the TV experience, but it won’t transcend it. Adding additional information and the ability to engage in “impulse” transactions to television will alter the experience somewhat, as did the shift from black-and-white to color.

Real change will only occur when companies use the television broadcast infrastructure in fundamentally different ways (as Iz.com intends to do) or create new media forms that don’t rely on television at all (as iCast is attempting).

Iz.com

Iz.com has a unique strategy to overcome the capacity constraints of existing Internet access systems. Instead of trying to create a TV-like experience on the Web, Iz is going the old-fashioned route and buying television time, initially on various cable networks.

The chairman and ceo of Iz.com is well-traveled entrepreneur Lee Stein, who previously founded online payments-processor First Virtual Holdings (see Release 1.0, 1-95). Stein saw an opportunity to use the Net as the linchpin of what he calls a “spiral marketing” process. Iz will design its TV programming to drive viewers to its Website, which will offer e-commerce, community elements, games and other features. From the Website the company will encourage users to provide e-mail addresses and information about their interests, which it will use as the basis for e-mail-based permission marketing campaigns. The e-mail marketing will seek to reinforce the Iz brand and drive eyeballs back to the TV and Web offerings, and so forth.

All this will only work if the audience responds to Iz.com’s content. To develop high-quality yet edgy programming, Stein brought in Rob Kenneally as president. Kenneally previously was president of Rysher Entertainment, a major TV production and syndication company, and before that was executive vp of the Fox Network, responsible for original programming in its early days. Iz has several other well-known figures involved, including University of Pennsylvania professor (and Interesting Person) Dave Farber as a director, and Marshall Rose (creator of the POP protocol for Internet e-mail) as cto, albeit on a part-time basis.

Stein calls Iz.com a “horizontal network,” because it is buying half-hour blocks across several networks including The Discovery Channel, Comedy Central, Lifetime, CourtTV, Fox Family and the Learning Channel. He draws an analogy to the seemingly ubiquitous infomercials for TaeBo fitness videotapes -- most TV-watchers have seen them during the past year, but few can remember where. “It used to be that shelf-space was everything,” explains Kenneally. “Now it seems to be mindshare.”

Most of Iz’s initial programming blocks are in the middle of the night or early in the morning, when these stations don’t offer their own programming and time is cheap. However, that isn’t necessarily a disadvantage for Iz.com's target audience of college students and others 18 to 25. And Stein hints the company will buy time on larger networks once it proves out its concept. Because of Iz.com's unique strategy, its customer acquisition costs should fall below those of existing e-commerce companies that rely on traditional online and offline advertising.
Iz is trying to create an entirely new, self-contained media environment, without depending on any technical advances in either the Internet or television. Of course, once broadband and interactive TV are widely available, Iz.com will be able to take advantage of them to enhance its service. But in the meantime Iz has the opportunity to build a brand based on many of the characteristics of streaming media.

Iz is developing original programming, but it will also stitch together movie trailers and other existing content to fill its time slots. Kenneally promises content that maximizes the merchandizing opportunities for Iz.com's e-commerce partners (which include EMusic, Global Sports and several unannounced large players), yet is also reformulated constantly in response to viewer reactions.

Stein and Kenneally see an additional revenue opportunity in reselling small portions of Iz.com's time to other Internet companies in exchange for cash or equity. With so many dot-com companies competing to build brands, it is becoming difficult for many startups, even well-capitalized ones, to find mass marketing outlets, so Iz could provide a compelling alternative. "If we can prove that we can grab the demographic that they're after, then they will be our customers," predicts Kenneally.

iCast

Recognizing the potential of streaming media and the success of companies such as Broadcast.com, Internet holding company CMGI announced earlier this year that it would form a new company called iCast to take on this market. CMGI brought former NBC executive Neil Braun on board as ceo, and folded in some of its existing properties such as ZineZone, a Web-based niche content and publishing tools provider. iCast, which is based in Woburn, MA, currently has 85 employees.

Braun and coo Matt Farber recently left due to conflicts with CMGI ceo David Weatherell, and former ZineZone ceo Margaret Heffernan was named coo and interim ceo of the company. iCast still plans to launch its main service in January, though the effects of the executive departures remain to be seen.

"We're not here to reinvent television, and we're not here to reinvent radio," says Heffernan. "Each one of us who has worked in those media know there are things they do uniquely well." Instead of trying to replicate the passive TV viewing experience online, where technical limitations make the experience less satisfying, iCast hopes to build something new.

iCast will target the 16-to-24 age group, the most active consumers of entertainment. Heffernan emphasizes that iCast's programming will be shaped by the proclivities of that demographic, which has grown up in the presence of the Net. "These are people for whom the dividing line between making media and consuming media is pretty meaningless," she argues, pointing to high usage of digital cameras, MP3 audio jukeboxes and similar tools. Rather than being passive consumers, members of this younger generation prefer to mix and match their personal styles from among many different brands and influences.
Thus, iCast is designing its service to put users at the center of their own entertainment experience. "We're building tools, content and integration of tools and content to put consumers at the dashboard," Heffernan explains, describing a suite of publishing, discussion, commerce and communications tools integrated with rich-media content initially around music and films.

The package will also include iCaster, a client-side application being demoed this month that combines streaming audio, video and MP3 music playback with chat, instant messaging and media search capability. Heffernan says she learned at ZineZone that just putting content and community tools on the same page isn't enough; those functions must have deeply integrated functionality and interfaces.

"The aesthetic of the Web is raw," Heffernan says. Rather than slickly packaged programs and channels, iCast's target demographic wants control over its own experience. iCast is designing its services to be flexible and personalized to user interests to the greatest extent possible. This wouldn't be possible without robust automated Web publishing software, which allows iCast to distribute out editing functionality to both staffers and users.

Heffernan acknowledges that while the Net lends itself to micro-targeting of narrow affinity groups, effective business models require sufficient aggregation and scale. People tend to fall into several different niches, so extreme narrowcasting may capture only a limited share of a consumer's attention.

iCast will seek to aggregate a large number of users by offering a broad range of content -- for example, including mainstream, independent and home movies in its film section -- though that content may be segmented into many narrow interest groups. CMGI's $100-million investment and various other resources will give iCast a leg up on the typical startup in this regard.

Heffernan argues that in contrast to established media, where distribution mechanisms are well-defined and differentiated by content alone, gaining widespread distribution is still the greatest challenge on the Net, making content itself less central. Unlike some potential competitors such as Warner Brothers' forthcoming Entertainindom site, iCast won't be tied to a particular set of content, but will have complete freedom to focus on what its users find interesting. The company will have more than 100 "community managers" combing through activity on the iCast site to identify patterns, so that channel editors can refine iCast's content to match user demand.
TIME, PLACE AND MEDIA

Having reviewed various attempts to deliver entertainment through the Net, we return to the question of just what makes a media experience.

Michael Gough, vp and creative director of Quokka Sports (see Release 1.0, 3-98), points out that there's a difference between watching a live sporting event and seeing the same event later on a videotape, even though the content is identical. Similarly, the water cooler conversation that occurs in hundreds of thousands of offices the day after an episode of a popular TV series such as ER is part of the experience of the show, and the identical content delivered as video-on-demand wouldn't have the same impact. Personalized, user-controlled video streams delivered over the Net may entertain, but they don't make people feel like participants in a simultaneous communal event.

Quokka creates immersive environments around specific sporting events such as the America's Cup yacht races, melding together video with tracking data, background information and other materials into a seamless (yet explorable) package. The goal, Gough says, is to give control to viewers but also to tell stories. For example, in covering an auto race, Quokka might present information about certain cars that illustrate particular narratives about the participants. Rather than make all the information available at all times for users to click on, Gough says, it's important to present the right information at the right time to create that narrative experience.

The challenge for online entertainment programmers is to generate that kind of storytelling in contexts that are far more fragmented. The quality of the content matters, but so does the scope of distribution and the ways that content is integrated with other features. Successful Internet-based media will be simultaneously narrow and broad, giving users unique, personalized content without losing the sense of communal experience that makes existing mass media so powerful.

The mirror of the mind's eye

All of this begs the question, "What is media?" In his manifesto Understanding Media, Marshall McLuhan defined media as extensions of humanity. This recognition that media come out of us, even though the individual viewer may passively consume media content, is crucial. Mass media reflect the culture that fosters them, though they often outlast their creators.

The generation that is growing up with computers and the Internet has, overall, a different set of expectations and behavior patterns from previous generations. It is used to the quick cutting of MTV and the myriad choices of the Web, and as it grows to maturity, it will be the primary audience for the next medium.

Already, surveys show that heavy TV viewers also tend to be more active Web users, and that younger users tend to be the most intensive consumers of both. Most of the companies developing broadband video programming on the Net focus on the younger demographic in recognition of these facts.
In the end, consumers will gravitate to the services they find appealing and will become comfortable with familiar practices and content forms. The next medium will never be as limited and centralized as today’s mass media, but neither will it offer a random experience to every viewer. As in the early days of television and radio, most experiments will fail, but over time a major industry will develop.

COMING SOON

- How big companies innovate.
- The Net in the educational process.
- The Internet SS7 network.
- And much more... (If you know of any good examples of the categories listed above, please let us know.)
SandHillmark.com:  
Virtual Cards for VCs

By Esther Dyson

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(continued on next page…)

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PERSONALIZED THANKS

We also offer a series of personal thank-yous for those important people in many of our lives:

Thank you, Joel Klein!

Al Gore, thank you for inventing the Internet!

Mary Meeker, thank you for covering my company!

John Doerr, thank you for funding my company!

Bill Kennard, thank you for ignoring my company!

(available in anonymous version.)

Kevin Werbach, thank you for explaining my company!

APOLOGIES

(Line not available)
RESOURCES & PHONE NUMBERS

Mika Salmi, AtomFilms, (206) 264-2735; fax, (206) 264-2742
Mark Cuban, Yahoo! Broadcast.com, (214) 748-6660; fax, (214) 748-6657; mcuban@broadcast.com
David Neuman, DEN, (310) 996-9200; fax, (310) 996-1101
Lee Stein, Iz.com, (888) 533-7834; lee@stein.to
Rob Kenneally, Iz.com, (323) 850-3584; kenneally@iz-inc.com
Margaret Heffernan, iCast, (781) 994-4100; fax, (781) 935-2296; mheffernan@icast.com
Dan Miller, On2.com, (212) 941-2400; fax, (212) 941-3853; dan@duck.com
Scott Harmolin, Centerseat, (212) 206-8411; sharmolin@centerseat.com
Josh Harris, Larry Lux, Pseudo Programs, (212) 925-7909; (212) 925-9577; pon@pseudo.com, llux@pseudo.com
Michael Gough, Quokka Sports, (415) 908-3800; fax, (415) 908-1841; michael.gough@quokka.com

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R E L E A S E  1 . 0

1999

Nov 30 - Dec 3  #*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. For more info, contact Carolina Fernandez; cfernandez@iir-conferences.com or visit www.iir-conferences.com/isp.

December 7-9  Streaming Media West ‘99 – San Jose, CA. The world’s largest Internet audio and video event. Call (800) 814-3459; fax, (800) 814-3460; confdesk@firstconf.com; www.streamingmedia.com.


December 8-10  CNET Builder.com Live – New Orleans, LA. Tips on designing and maintaining Websites. E-mail builder-live@fawcette.com; www.builder.com/web.builder.


December 31  Fin de siecle.

2000

January 6-9  Consumer Electronics Show – Las Vegas, NV. New technologies to get and stay connected in life, at work and at play. Fax (805) 644-5793; www.CESweb.org.

January 26-28  Fifth International Symposium on Artificial Life and Robotics - Oita, Japan. Call +81 (97) 554-7831; fax, +81 (97) 554-7818; arobsecre@cc.oita-u.ac.jp, www.arob.cc.oita-u.ac.jp.

February 1-4  LinuxWorld Conference & Expo - New York, NY. For believers, heretics and others. Call (800) 657-1474; LinuxWorldexpo@idg.com; www.linuxworldexpo.com.

Feb 28 – Mar 2  Embedded Systems Conference Spring – Chicago, IL. Tools, techniques and services for embedded system design. To register, call (888) 239-5563; esc@mfi.com; www.embedded.com/spring.

March 12-15  **PC Forum - Scottsdale, AZ. Sponsored by EDventure Holdings. You read the newsletter; now attend the conference! Call Daphne Kis, (212) 924-8800; fax, (212) 924-0240; daphne@edventure.com; www.edventure.com.

* 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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Daphne Kis
Publisher