A movie was transmitted on Internet, the global computer network, for the first time. But the effort demonstrated that while information-industry giants like Tele-Communications, A.T.& T. and Time Warner are tantalizing Americans with promises of hundreds of channels of ultra-high-resolution interactive pictures, the technology is still in its infancy. [De.]

Cult Film Is a First On Internet

By JOHN MARKOFF

SAN FRANCISCO, May 23 — As historic moments go, this one it could be argued, was closer to "Watson, come here!" than to another Saturday night at the movies. A small audience scattered among a few dozen computer laboratories gathered Saturday evening to watch the first movie to be transmitted on the Internet — the global computer network that connects millions of scientists and academic researchers and hitherto has been a medium for swapping research notes and an occasional still image.

Yes, the cult movie, "Wax: Or the Discovery of Television Among the Bees," had to be reduced from full color to a blurry black and white. And true, the spotty audio occasionally went silent. But coming as companies in the cable TV, telephone and computer industries are hot on the trail of 500-channel, all-digital TV, let history record that Saturday night marked the first baby steps in that direction.

The movie, an 85-minute feature by David Blair about a beekeeper who ends up being kept by the bees, has attracted a cult following since its release in 1992. Mr. Blair transmitted it Saturday night from a film production studio in midtown Manhattan. He played it on a VCR and fed it into a computer that converted it into digital form and fed it into the Internet.

Promises, Promises

Mr. Blair's effort demonstrated that while information industry giants like Tele-Communications Inc., A.T. & T. and Time Warner are tantalizing the nation with promises of hundreds of channels of ultra-high-resolution interactive pictures transmitted via fiber-optic superhighways, the technology is still in its infancy.

Indeed, it was not until halfway through the digital network premiere of "Wax" that the engineers gathered at an office of Sun Microsystems Inc. in Mountain View, Calif., were even able to find the movie signal in the Internet datastream and direct it to play on their color work stations.

And when it finally flickered into view on an eight-inch window within a computer screen, it was clear that digital broadcasting was not yet ready for prime time. In part because of limited data-carrying capacity of the Internet, the movie had only about half the resolution of a normal television image.

Surrealer Than Surreal

Even more disorienting, the movie was broadcast at the dream-like rate of two frames a second, instead of the broadcast standard of 24, giving it an even more surreal quality than the big-screen original.

The soundtrack came through haltingly, frequently broken up by what the engineers called "packet drop out" when the Internet became too congested with other data traffic.

Reduced, decolored and sometimes silent. But still historic.
Saturday night at the movies comes to computer screens

BY JOHN MARKOFF
New York Times Service
San Francisco

As historic moments go, this one, it could be argued, was closer to “Watson, come here!” than to another Saturday night at the movies. A small audience scattered among a few dozen computer laboratories gathered Saturday evening to watch the first movie to be transmitted on the Internet — the global computer network that connects millions of scientists and academic researchers and hitherto has been a medium for swapping research notes and an occasional still image.

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Mr. Blair’s effort demonstrated that while information industry giants such as Tele-Communications Inc., American Telephone and Telegraph Corp. and Time Warner Inc. are tantalizing viewers with promises of hundreds of channels of ultra-high-resolution, interactive pictures transmitted via fibre-optic superhighways, the technology is still in its infancy.

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Despite the flaws, the engineers at Sun Microsystems said they considered the premiere a success.

“We really don’t understand the problem of sending thousands of simultaneous digital video signals yet,” said Tom Kessler, a Sun software engineer. “Come back in six months and this stuff will be working flawlessly.”

Indeed, digital video broadcasting over Internet is being developed independently by small groups of researchers at Xerox’s Palo Alto Research Center, the Information Sciences Institute in Los Angeles and the Lawrence Berkeley Laboratory in California, and at the corporate laboratories of Bolt Beranek and Newman in Cambridge, Mass.
Mukesh Kacker, Baird Llyod, Neal Nuckolls ja Tom Kessler sanfranciscolaisesta Sun Microsystem -yhdistä todistuval historiallista hetkeä: elokuva näyttöpäätteeseen ruudulla.

Pitkä elokuva esitettiin ensi kerran tietoverkossassa

ERKKI HUHTAMO

"Ensimmäiset kerrat" ovat tekniki- kan historiassa usein jääneet ai- kalelaisltaa huomaamattia; vasta jälkipovet nostavat ne esiin myyttisine hetkinä.


Internet-verkossa joka puolella maililtaan levitetty teos oli roh- keana kokeilijana tunnetun new- yorkilaisen David Blairin jo kult- tielokuvan aseman saavuttanut WAX or the discovery of television -monitoimien johdossa, joka nähtiin viime vuonna Helsingissäkin MuuMedia-festivaalissa. WAX-elokuvalta tehty kokeilu oli ensimmäinen konkreettiin


‘Wax’ breaks ground as electronic cinema

By HOLLY WILLIS

HOLLYWOOD Four years ago, David Blair made an experimental feature length film entitled “Wax, or the Discovery of Television Among the Bees.” To call “Wax” a film was something of a misnomer, however; the project was composed mainly of digital images created using hardware such as Microtime Impact and various PC workstations.

And while the film was eventually transferred to 16mm for theatrical release, the project may have been more accurately called a video, or even electronic cinema.

The film follows Jacob Maker, played by Blair himself, through a process of self discovery, aided in part by his swarms of rare, paranormal bees. The film, with its innumerable cultural references, its clever and complex narrative, and its delirious visual style, has been compared to everything from the drawings of M.C. Escher to the films of Kenneth Anger.

“Wax” in its original form was self-distributed by Blair and played in more than 20 cities to excellent reviews. The project did not lapse into oblivion after its run, however. Instead, Blair returned the project to the digital domain by compressing the images using MPEG technology. “Wax” was shown on the Internet in May 1993 and again in August 1994. The resulting project, which is still available via Mosaic on the World Wide Web, enables viewers to add their own text, audio and video segments to the original version. “Wax” was thus not only the first film to have been “broadcast” via the Internet, but was (and is) the first interactive feature available on the net.

But Blair hasn’t stopped. At the World Wide Web conference in October, a standard, called VRML (Virtual Reality Modeling Language), was set. Previously there had been no common computer language for creators of VR programs. Using VRML, Blair is currently creating a virtual reality version of “Wax,” which again will be available on the network.

The VRML has allowed Blair to take the 250 3-D scenes from “Wax” and turn them into virtual rooms through which a viewer can travel in real time.

A CD-ROM of the project will be sold as a stand-alone, but users can also log onto the net and use the CD-ROM drive, rather than a server, to access all the sound and video. The virtual reality version of “Wax” is slated to debut on the net in late January or early February; the CD will be available in March.
Making History on the Net

While video on demand remains for most in the talking stage, New York filmmaker David Blair sent out the first scouts last year, multicasting his surrealistic cult favorite, _Wax, or the discovery of television among the bees_, across the Internet. A halting, black-and-white, 2-fps affair, with intermittent audio failure, it was history anyway, a real-life expedition into the uncharted land we glibly picture as the 500 channels.

Now Blair has come to the Internet from another innovative but more practical angle, repurposing _Wax_ as "Waxweb," a hypertext document on a reconfigurable system that can instantly be read—and written to—by anyone with a 2,400-baud modem (telnet address: bug.village.virginia.edu 6666). A 14,400-baud modem running SLIP and Mosaic additionally gets the user the hypermedia supplements, including 2,000 stills from the film and 600 fifteen-second video files, encoded gratis by Xing, Arroyo Grande, California. On the Net, Mosaic users (http://bug.village.virginia.edu:8001) see 1/4-screen versions at 30 fps with about a three-minute wait to load a file. Visitors at Siggraph this month will see the project with full-screen video fed from an onsite workstation.

At the lowest bandwidth, the user experiences the film entirely as text consisting of the narrator’s script, plus descriptions of the shots and additional commentary from Blair. Although users don’t have audio and video, they can interact with the film/document instantly, following hypertext links from Blair’s 25 worldwide collaborators and anyone else who feels the urge to log on and add on. Blair calls the ongoing project "a narrative machine," reconfigured with each addition from the Internet audience.

All this functionality is centered in a MOO, a dynamic narrative server run by Brown University-based Tom Meyer (the server itself has now been moved to the University of Virginia). A MOO is an object-oriented MUD (multiuser dungeon). These multiuser softwares have an architectonic interface—the text appears as linked boxes, like rooms—that establishes Waxweb as a "place" where visitors can readily navigate and work alone or with others.

Blair calls it a laboratory for his next project, _Jews in Space_, a work of "electronic cinema" authored with the functionality that emerged from the Waxweb experiment. Blair intends to use the workgrouping approach not only for the film’s narrative but to produce and process the images interactively, too.

Cynthia Wischert
The New Deal

Sharp producers are discovering fresh outlets for their product, from the Internet to virtual reality.

BY HOLLY WILLIS

On May 23, 1993, David Blair "screened" his experimental video "Wax, or the Discovery of Television Among the Bees" on the Internet. While the feature-length video did not draw the mass audience of "surfers" that we know traverse the net daily, the event nevertheless did garner considerable attention. The New York Times likened the screening to Alexander Graham Bell's breakthrough moment with the telephone. Indeed, the event was revolutionary in suggesting the radical potential for independent producers' new outlets, which today, in addition to the net, include the burgeoning cable market, interactive games, and yes, virtual reality.

Blair showcased another version of "Wax" at last month's SIGGRAPH convention; the expanded video is a quadrilingual hypertext version with several thousand hyperlinks, thousands of stills and more than 500 digital segments that viewers may access via the net across most platforms.

Viewers were able to add text, audio and video to the original version; each viewer's version was also accessible. Just as the original screening of "Wax" over the Internet suggested an entirely new form of film and video delivery, the SIGGRAPH event offers an example of the manner in which modes of delivery and reception are shifting radically.

Technological advances and legislative shifts have also greatly altered the cable sphere, making it increasingly significant as a new outlet for independent producers. On July 6, for example, the Federal Communications Commission ruled that New Jersey Bell has the right to sell programming through its telephone lines. This decision has tremendous implications in terms of the possibility for telephone companies to compete with cable companies, and it opens up an entirely new distribution outlet for film and video producers.

New Jersey Bell will provide video dial-tone service, which allows for the delivery of cablelike service into homes and offices in Dover Township, N.J. Most of the programming will be provided by FutureVision, a company based in West Conshohocken, Pa. "Initially we will be rolling out cable plus and cable TV, and we will offer channel on demand in such a way that viewers can subscribe to services on a weekly or even weekend basis," explains chief technology officer and FutureVision co-founder Paul Halbake.

Programming for the growing number of channels is becoming increasingly centered around a few companies that can link indie producers and outlets, firms like the Santa Monica-based Bruder Releasing Inc. "Bruder Releasing is like a clearinghouse," explains BRI president Marc Bruder. "We supply the programming for over 200 cable companies, and we pride ourselves in being able to find whatever product the cable company needs, whether it's action/adventure romance, erotica or special interest films. Representing independent production and distribution companies as diverse as Full Moon I.R.S. Releasing and Trans Atlantic, BRI has become an increasingly vital liaison between indie producers and emerging markets. It would be nearly impossible for an individual producer to successfully contact all the cable companies, and given the problems with right and legal issues, it's doubtful whether the cable companies would even deal with an individual," claims Bruder.

New-outlet options more in line with traditional producing include creating material for various interactive media. Santa Monica-based Cineville, for example, recently launched a unit that will produce live-action footage for interactive projects. "For the time being, we..."
David Blair's voice is soft and hollow. His narration in WAX or The Discovery of Television Among the Bees, Blair's first feature-length video, pleasantly suspends the spectator's disbelief, even when he says things like, "When I was away from the ground, the bee television became even clearer. I could lose myself in the images, and become a weapon myself, rising through the air. My destination was the moon. That's where the dead lived... They spoke to me as bees."

Blair, a 36-year-old independent video artist, took six years to make the 85-minute work, raising $150,000 from German broadcaster ZDF and an alphabet soup of American grants. When it was finally complete, WAX was judged too long for video art venues and not a classy enough format for film distributors. "People I know who have been working for ten years [in video] just can't get distribution," says Blair. It took a year for Blair to find a large audience for WAX — but when he did, it became "part of telecommunications history."

On May 22, the entire feature was transmitted worldwide on Internet, the government-sponsored, global computer network of universities and research centers most widely known for its electronic mail services. WAX became the first digitally broadcast cinema — the prototype for the much talked-about electronic data superhighway being developed and fought over in the business press each day by the likes of Time Warner, AT&T, and the FCC. The "multicast" was not without its problems — data traffic caused the video to come over at two frames a second instead of the standard 24; the image was black-and-white, half the resolution of normal television, and often soundless — but those kinks are already being worked out by researchers on Internet. Vincent Bilotta, a costume designer and friend of Blair's who engineered the multicast says, "We've come two generations since then. Two weeks ago, it was in black and white. Now, we have color."

Long before the multicast, Blair had made WAX into a cult classic by creating word-of-mouth on Internet's electronic mail. "I spent a lot of time posting on networks, telling folks about it. And that really works for this film. It certainly wouldn't work for Laws of Gravity," he says. WAX — the story of a weapons simulation designer whose grandfather's collection of bees puts him in touch with the land of the dead — is filled with appealing tidbits for cyberspace fans: the eye of God is located on a television planet; missiles turn into flying saucers; the afterlife looks like a computer graphics demonstration of virtual reality; and the bees have a television that tells our hero that he will turn into the first plutonium bomb. The sense of grandeur and temporal jumps found in WAX evoke the work of writer Thomas Pynchon. "The more literary side of the science fiction community loved it," says Blair. Praise from fanzines generated enough interest in WAX for a 35mm version to play at New York's Public Theater to rave reviews. Blair self-distributed it to art houses around the country, sending out advance word via e-mail. But what began as an advertising event eventually brought WAX unprecedented global exposure.

Most of the shots in WAX — whether archival footage, live-action video, or computer graphics — are about three seconds long and connected by dissolves, creating a visual rhythm that, along with Blair's non-synchronous narration, enters the viewer. This effect was amplified on the Internet multicast. The narration flowed from the computer speaker at normal speed, while Internet's transmission of images every half-second created the effect of a slide show. "On the net, you see at least one glimpse of each shot," says Blair.

The multicast took hardly any preparation: Bilotta just hooked up a VCR to the video board on his computer and pressed play. But because only certain Internet receivers are able to accommodate video images, only 400 of the thousands of institutions on line around the world were able to see WAX. The biggest challenge in making every Internet site receive video is increasing "band width" on the network, so countless films can be transmitted simultaneously at a decent speed, at high resolution, and without interference.

Bilotta says this burgeoning technology will have particular benefits for independent filmmakers: in the future, home computers may be able to handle not only marketing, exhibition, and distribution, but also post-production. By the time Blair finishes shooting his next work, in three or four years, he may be able to download all of his video into his computer, get on line with a cheap post-production facility in another city, and edit cheaply over the phone line from his own home. "We're forming a virtual production network for people producing film, video and print," says Bilotta, who designs film and video effects equipment for Silicon Graphics, Inc. — the California company that just made a deal with Time Warner to develop strategies for the superhighway.

Digitizing film, with its ultra-high resolution, is much more complicated than video, but, actually, the technology has already been developed by, of course, the military. It's a matter of time before the capability trickles down. If cinema and personal computing truly merge, who knows what new, interactive forms may be born? "It's sort of like imagining video art in 1968, or imagining the independent American cinema in 1958," says Blair. WAX's six-year production schedule called for three 20-day blocks of shooting, much of which took place on location at a missile base in New Mexico. After paring down what he shot from 120 to 20 hours, Blair dumped his tapes into a Montage editor, making WAX the first independent video feature to use a non-linear editing system.

The bees in WAX make a good metaphor for a synthesis of the mechanical and organic. Through the bees, the video's main character is ultimately transformed into a murder weapon in the Persian Gulf War. Much of WAX dwells on video and computer technology's link to the military, and the irony of transmitting it on a computer network used by defense contractors was quite intentional. One briefly-mentioned character even dreams of being able to send moving pictures over the telephone — yet another reason why WAX and Internet seemed destined for each other. But in spite of WAX's place in Internet history, Blair's concerns with his work are still essentially formal. "In a way, [WAX] is a lot like a bad science fiction film, where you know where you are, but you really don't know how you got there and you don't know where you're going," he says. It's logic and its im agism is very associational. It's meant to create a cloud over your head. It's a very big world, and you travel in many different directions."