The WAVE Report on Digital Media
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0113.1 Story of the Issue

***Residential Gateway European Forum
Nice, France
(February 26-28, 2001)
by John Latta

As the home becomes the host for increasing quantities of
electronics, including the PC, the recurring question is – where
does the market go from here? Does it converge, diverge, is it
more integrated or is it a random assortment of electronics boxes
scattered about the home? This is compounded by the demand for
broadband connectivity. Now the broadband networked home has
become an IT infrastructure. Yet, to see this as a traditional IT
system would be mistake. A home network can be a jumble of
technology with a substantial media component including all forms
of draconian copy protection to protect Hollywood from the
excesses of consumers. Out of this chaos is the view that an
interface to the infrastructure outside the home is critical.
Thus, rises the need for a Residential Gateway (RG) – an external
digital interface between the home and the world. Dancing in eyes
of marketers are $ signs of a new market which smells like
another set-top-box market, a PC market or a home phone enabler
market. Delusions of market grandeur. Well, is it so?

At the WAVE Report we sought out another conference in search of
answers. The Residential Gateway European Forum rose to our radar
screens. It was a near term event and focused in just this area,
so off to cold and rainy Nice we were. In the process we
uncovered old stories, a stalled market and a number of
surprises.

IIR Telecoms and Technology, out of London, organized the
conference. Davide Bonomi, produced the event which had both a

pre-forum workshop which we also attended, and a 2 day
conference. Coming up is a Home Networks European Congress that
also has an interesting program.

A cynic might ask – why go to Europe to hear about Residential
Gateways, when all the action is in the US? Wrong question.
Europe's view has both many striking similarities to the US but
some unique approaches to this market that are ahead of the US.
We learned much from the forum and this report will cover the
highlights and our assessment.

This has been a successful conference for the organizer. They
expected 70 and 115 came. There was a European centricity to the
conference but this did not mask the underlying issues.

Pre-forum Workshop

Parks Associates, in Dallas, TX, held the pre-conference forum,
entitled "Creating a Business Model for the Residential Gateway."
The short answer response to the title of their presentation was
- it depends on who has the product or service and the market is
not expected to materialize until 2004 or 2005.

Parks is a research and consulting firm, specializing in emerging
residential technologies. The firm focuses on the home and
consumer markets with an emphasis on technology products and
services. They do both primary and secondary market research.
Many of their products are the result of multiclient studies.
Some of the more recent ones include:

  Bundled Services and Residential Gateways, due June 2001

  Networks @ Home: High-End Entertainment Households, available

Networks @ Home: Home Builders and Network Wiring, available

Digital Lifestyles@Home: Europe, due September 2001

eHome 2001: Consumer Receptivity to Electronics and Services, awaiting sponsorship

Much of the presentation materials were derived from these various studies including materials from the first report cited above. The pattern of the presentations, and assumed underlying analysis, was to summarize the data from various studies and other secondary market sources then derive market estimates. They stated many times how conservative Parks is as an organization.

Key points from the presentation, summarized in a bullet format include.

They define a Residential Gateway (RG) as:

A network interface device that terminates a wide area network and connects to end-user devices directly or through a home network. In addition to features common to all gateways, it should include all of the following: an embedded broadband modem, routing capacity, and security features.

Parks segments the RG market into the following classes of devices:

Virtual Gateway that is the software integration of routing and a web only device.

Web Centric RG that combines a modem and a router and bridge in hardware.

Thin server RG that terminates a network and enables one service such as e-mail - thin e-mail client is a good example.

Set top RG which includes modem, router/bridge and video.

Multi-service RG that has modem, router/bridge, and/or voice video.

Whole House RG that is a centralized device that enables any service to any device from any access network.

It is their view that today's broadband modems are the stepping-stone to RGs. With lower component prices and standards, broadband only modems will fade from the product space. It is also believed that RG will not be a retail consumer item but sold to service providers who subsidize them for the end user. A model very similar to set-top boxes.

Parks associates characterizes the RG market today, 2001, as one where the consumer is aware of the RG but there is not consumer interest to buy other than by Geoffrey Moore's early adopters. In order to "cross the chasm" and appeal to the early majority buyers the market must make the following transition:

2001 - 2002
    Phase 1
        Strong Set-Top RG Rollout
        PC Netcentric RG
        A market emphasis on Virtual and Web-centric RGs
        Thin Server RG show growth

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2002 - 2004
    Phase 2
        Set-Top RG Rollout continues and grows
        Shift away from Routers to Web-centric RG
        Structured Wiring Installs Grows
        Move towards Bundled Service

2005
    Phase 3
        Service Bundling begins (Premium Services)
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Parks did not make specific market projections but did show the market share by type of RG.

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2001
    Set-top RG - 57%
    Virtual RG - 30%
    Multi-service RG - 8%
    Thin Server RG - 3%
    Web centric RG - 2%
    Whole House RG - .3%

2005
    Set-top RG - 53%
    Multi-service RG - 19%
    Virtual RG - 17%
    Web centric RG - 9%
    Thin Server RG - 2%
    Whole House RG - .4%
```

It was stressed several times that there is no well-defined business case today for the RG. Yet, Parks stated that in spite

of these limitations that service providers should install RGs now with advanced remotely managed features in anticipation of the roll out of such services in 2 - 3 years. Parks believes the RG market will not emerge until 2004 – 2005.

In order to build up to this assessment of the RG market, the presentation covered:

    Home Networking,
    Broadband delivery to the home,
    Information Appliances and
    Packet Switched Phone.

We highlight some of the interesting points made.

    Intel, in Q4 2000, had 50% market share for wireless access points with its AnyPoint product and sold only 12,000 units.

    Parks has observed that the pricing for ILEC DSL service has risen to $49 from $39 in the last few weeks.

    Recently Excite@Home has begun to offer add on services that include: virus protection, security and others.

    There are two drivers for home networking:
      High Speed Internet Access and
      Entertainment.

To support this they cited their market survey results which show:

    69% of surveyed households would like to network video throughout the house;

57% would like to network the PC DVD drive to the
television; and

45% would like to network the PC audio to the home stereo.

The uses for home networks, as per their survey, are:
   88% - Shared Internet Access
   86% - File Transfer/Sharing
   80% - Printer Sharing
   59% - Multiple Locations to access computer/Internet
   40% - Multiplayer gaming

The type of network deployed is:
   88% - Ethernet
   4% - Not Sure
   3% - Other
   2% - Phoneline
   1% - AppleTalk
   1% - Wireless
   1% - Powerline

Some of the most interesting results came when asking questions
about how interested consumers would be in services as the prices
went from free to $5 or $10/month to having to also purchase
additional hardware and/or software.

Static IP address
   Free - 82%
   Fee - 41%
   H/S - 27%

Music Site Subscription

```
        Free - 40%
        Fee - 14%
        H/S - 10%


    Video Conferencing
        Free - 53%
        Fee - 20%
        H/S - 13%


    IP Telephony
        Free - 70%
        Fee - 31%
        H/S - 21%


    Home Control
        Free - 60%
        Fee - 32%
        H/S - 24%
```

Parks defined an information appliance (IA) as a relatively low cost, easy to use, special purpose device that brings the benefits of the Internet to consumers. Classes of IA devices include:

```
    Appliance-like PCs
        Net PCs
        Diskless PCs
        Internet Terminals
        Computer NetPCs
    E-mail Terminals
        Wireless Web Tablets
        Screen Phones
    Wireless Handhelds
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Mobil Phones
        Handheld PCs
        e-Books
        Note Pads
        2-way Pagers
     Enhanced Entertainment
        Digital Music Players
        Enhanced TV
        Game Consoles
     On the Road
        Automobile Telematics
     Miscellaneous
        Home Appliances
        Service Gateways
        Vending Machines
        Wearables
        Toys

In the study on Multiple PC Households it was asked how much the
consumer was willing to pay for a portable Internet only device.
The results are very consistent with consumer electronics price
elasticity.

        <$100 - 32%
        $150 - $200 - 12%
        $250 - $300 - 10%
        $400 - 6%
        $500 - 7%
        $500 - $800 - 2%
        No responses or refused - 29%

Forum

The conference hosted fifteen different speakers. There were a number of common threads.

The Europeans recognize that the residential gateway is not a retail product but part of the home infrastructure. The development of this market relies on a number of critical factors.

Premium Services or add-on must be tied to the gateway as an enabler for how the RG is justified. This is critical in order to subsidize the cost of the equipment.

The Europeans are just a clueless as the US in determining what premium services will drive incremental revenue.

The list of premium services is virtually the same among the speakers here and what is being discussed in the US:

Home management;
Security;
Gaming;
Entertainment including audio and video;
Health.

We were surprised at the emphasis placed in Europe on home management, which does not appear as important in the US.

Education as a potential premium service was not discussed, while this is more important in the US.

Much less emphasis is being placed on entertainment or content as the key premium service according to the European

presenters. Note that the Parks results discussed above is based on US data only.

Over and over the topic came up – who owns the RG? Nokia introduced a novel concept – that of a services and content broker. This is an intermediate company that delivers the content or information to the home. It is one step up from the ISP. Yet, Aliunde brought another issue – the ownership of equipment installed in the home, especially that which is permanent, is governed by property laws.

Considerable emphasis is being placed on the home network as a delivery platform. The key enabler being OSGI. One speaker stated that OSGI had been merged with UPnP. We regard this as a positive move. According to those at the conference OSGI allows for managed services and an open platform that many can write to.

Seeing the home as a platform is another way to view this market. That is, just as in cable and DSL, those that enable the delivery of broadband have the customer; the same could be said of those that enable the home network, they have the network and the customer. For example, the network enabler could serve as a gatekeeper to the home. ASPs or content providers would pay a fee for entry; the customer could set up preferences and denied entry conditions. There are many variations to this approach. Thus, the market is potentially -on services could be created by those looking to exploit much larger than a single provider could enable and many add market niches and opportunities. Similar to the PC software market.

We now transition to the individual presentations.

France Telecom

Interesting market statistics.

    155 Households in Europe
    2004 Estimate
       Broadband homes in Europe – 14m
       ADSL – 22% Broadband share
       Cable – 9% Broadband share

FT is now selling a home networking kit that is based on the
Intel AnyPoint HomeRF product.

Nokia

Nokia has a Home Server product. They are exploring this market,
testing the waters and bringing a broad view of what is needed.
The company had an impressive presentation of a company's view of
the market and what it is doing. Nokia is a strong European
player and will not ignore this market. Key points include.

    The RG must transition from being a bit pipe to a service
pipe.

    The objective of a RG or Home Server is to drive the
incremental revenue/home up with the RG.

    Unfortunately the many telecommunications products and
services is they are typically late to market compared to
promises and the market falls to commodization faster than
expected. It is hoped that this will not happen with the RG and
the way to avoid this it to continually innovate with service
delivery.

OSGI is important to enable both a service management concept for the home and an open interface that others can deliver services to.

Nokia sees the services based on clusters, or bundles, of similar services, such as, data, entertainment, home and security/health.

The Nokia home server is home network agnostic. It supports both Bluetooth and 802.11b.

KPN Research

This is The Netherlands PTT. They did a pilot study with very interesting results.

Of the Scandinavian countries The Netherlands has a low usage of Internet.

    Non-users – 50%
    Occasional Users – 35%
    Daily Uses – 15%

A pilot trial was defined around the concept of a virtual business unit called "KPN Home Services." The trial was to install home networks and more in 8 homes.

The following was a part of the home installation:
    Establish a home network based on a RG – apparently 2Wire, which was supplemented by a PC for use only as part of the home network;

    Provide a custom web pad set up for consumers and e-mail. The emphasis on the pad was ease of use for non-Internet users;

A cache was set up for all screen devices, Internet sites, music and video; and

The home network was remotely managed.

9 non-KPN families were selected. The profiles were:

HomePNA was used in 5 homes;
2 families had CAT5 wiring;
2 families got a completely wireless home network; and
6 families has multiple PCs

Installation was targeted at 2 per day but the first installs took nearly 12 hours and then went to 4 hours with the last one. There were an average of 2.7 visits by the installed to each family.

The webpad got the most positive response for:

The U/I;
Mobility;
Always on-line; and
Internet sharing.

The key results from the pilot, which is just ending its 3 month run now, were:

There was a significant increase in Internet usage. Some non-experienced users are now up to 1.5 hours per day.

Adults use the webpad for information and children for gaming;

Non-experienced users and children only use the KPN Research GUI, experienced user sometimes switch to Internet Explorer; and

Browsing the Internet instead of television (or on conjunction with it) is increasingly popular.

These are striking results. An integrated network, consumer friendly webpad and wireless drives Internet usage with non-Internet users. However, the cost of implementing this is daunting but at least these results provide very useful pointer.

Echelon and ENEL

This is a project to remotely read power meters in 27m HH in Italy. This uses power line networking. The project is to begin in less than 6 months and cost $1.5B. However, it was unclear how this could enable home networking. A work in progress.

3COM

Some interesting predictions were made:

A Home OS will emerge;

Home telemetry will be an important application for home networks;

By 2004
   The RG will then have a role in the market;
   Intelligent devices will be available;
   Service clearing houses will be enabled by brokers and have a strong role in the market.

Aliunde

Aliunde is basically a new home technology integrator. Stewart
Jones, the Managing Director of the company works with developers
to provide a complete wired and managed home environment. As new
subdivisions are developed he will provide cabling from a
subdivision gateway to the home gateway and to the entire
wiring/home infrastructure. Further, he is seeking to provide the
after sale services to the home. His firm has at least one 15-
year service contract.

Aliunde is only 14 months old and this was the first public
disclosure of its business model. One might respond that this is
just a current version of the 30+-year-old intelligent home.
Correct, however, gateways, security, home management, broadband
and many other functions in the home have changed significantly
over time. Stewart sees a significant opportunity now. This
opportunity is also at the center of the struggles to find a
place for the residential gateway that has been discussed in the
conference.

His talk began with a barrage of acronyms that he is using to
establish the company's brand name. He describes the homes he
creates as iHomes for Internet homes. Going beyond this he also
calls them Digera enabled homes. Within this is a:

    iLifestyle Options Program
    iLifestyle Support Program
    Digital Concierge Service - a community Internet Portal

The services that the company can implement in homes are:

Communications
        Entertainment – all forms of audio, A/V, projection TV
        Security
        Control of the home
        Services
        Support

From a networking standpoint he is behind Ethernet. Their focus
is on 1GE although it was unclear what the data rate is of the
current installations. Each home has a complete home gateway for
the services. It was implied that all homes are serviced by fiber
and this is one of the reasons they can support 1GE. Note that
there were no technical details given in the presentation and
these tidbits came from the talk.

There are 17,000 DSL lines and 23,000 cable modems in the UK.
Thus, there is virtually no broadband in England. As he stated
"69% of the UK does not even know what broadband is."

There is a hierarchy to Aliunde's system and infrastructure
management concept. It begins with the home and its gateway, then
to a subdivision gateway and the next step, but not there yet,
the Aliunde Management Center. This has a close parallel with the
CO for the PSTN but the scope of Aliunde's infrastructure is much
broader. In fact, behind this implementation is the digital
linkage of physical communities.

Stewart is also a supporter of open access and seeks to have the
broadest range of suppliers be it power, security or broadband.
As he described it – "I am an independent 3rd party working for
the home owners." In another quote: "I am the developer's friend
and the resident's friend."

Presently he has implemented 1,000 homes and has 2,300 under contract. Given that there are only 200,000 new homes in the UK a year he has done quite well in only 14 months. He has been approached to do work in the US but it was unclear what his response was. I asked Stewart if he will do existing homes. He gets many such requests, including those undergoing retrofits, and does not want to take the risks. There is enough new business.

One of the worst nightmares of this company is staffing. He just cannot get individuals who are cross-trained in all the technologies he installs in homes. Although he did not say specifically it appears that Aliunde does not do the actual contracting for the installation but either recommends the installers or the developer of the housing does.

The average cost to fit a new home is £2,000. His target buyers are those that are "cash rich but time poor."

It was very clear after the Aliunde talk that this approach is at one end of the spectrum of equipping the home for premium services. Gateways are an embedded component of the home and thus it is the services enabled that make the home valuable. With a 30+year mortgage the RG is pennies on the home payment. What is different with Aliunde is that the scope of home network goes well beyond the home.

The conference was excellent in framing the issues surrounding the RG, home networks and premium services. With that we pull the pieces together and assess the implications.

WAVE Assessment

The pre – forum workshop surfaced important issues.

Parks offered some valuable insights based on their consumer surveys. In particular, with the exception of Static IP address, IP telephony and Home Control it is difficult to make a case for other premium services, in the context of the survey they took. The core issue is that consumers will not pay or pay only small amounts for those services which go beyond the enabling service - be it cable, telephone or Internet.

The Parks results are significantly biased to entertainment as a key driver in both the networked home and the RG interfaced home. Yet, it is important to notice how the premium services described in the pre-forum workshop do not include entertainment. When music is not free the consumer rapidly loses interest.

Building on the observations during the forum we see multiple dynamics in play is shaping the RG market:

    RGs are the external interface at the home for connection to one or more outside network(s);

    RGs are infrastructure and are too expensive;

    Consumers do not play for infrastructure - early adopters may but this willingness early in the market cycle to buy hardware cannot be extrapolated to the mass market;

    No sector of the consumer market has shown a willingness to mass deploy RGs other than as cable STB's;

    The technology in today's RGs and the networks they are connected to cannot deliver some of the more interesting

entertainment applications, which includes networked high quality video; and

The premium services or add-ons, which will drive gateway adoption, remain unclear and thus an ROI scenario for service providers is unacceptably risky.

The net result is that the RG market is not a near term one. We are less inclined to accept the 2004 to 2005 timeline, given by Parks and others, in that we believe there are both products and services that will emerge in the interval from now forward which could shift the market.

With this as context let's explore the implications of the RG market further. Specifically, where are we at in evaluating the Residential Gateway market and related issues? Further, how can a company make money in this market?

There is no common specification for a RG, thus its functionality is based on the provider and the standards effort which appears to have the strongest support is OSGI. The RG as a market concept exists in name only which is, in contradistinction, to the cable STB whose standards are driven by the cable industry;

Because the RG is home infrastructure the only likely place it will be bought by consumers directly is as part of a home purchase;

Cost recovery for RG independently installed RGs will only come about through add-on services it enables;

The current costs of RGs are too high to allow reasonable cost recovery by service providers based on the amount that consumers typically pay for home services;

A home network without an RG is just two or more computers connected together and with little or no prospect for premium services;

A broadband home network with a RG is just that a home network with a broadband connection and useful premium services supported or enabled by the RG may have no relation to the home computer network;

Thus, at the center of both home networking and RG is how to reduce the cost of every component being offered to the customer: the gateway, and the network and the provision of services that are valuable in the home.

What then are the means to approach these issues? Again the conference was excellent in framing a response to this question.

(1) Identify and implement high value services that are enabled by both the home network and RG.

From the conference this got nowhere. Everyone had the same list of services, no one described an economic case that was compelling and the consumer survey data showed a precipitous decline in consumer service acceptance when even small fees were attached. The RG and services market is immature. Our concept today of add-on services may radically change with greater bandwidth, the development of digital communities, greater control of utilities which enter the home including power and improvements in RG design.

(2) Open the home network to external service providers.

That is, be it as a service broker or an infrastructure enabler, a company would implement some combination of home network and RG as a platform for development and delivery. This company would, most likely, supply services to the infrastructure and make the installed base of so enabled homes available for others to create services. The infrastructure enabler would charge fees for access to the home.

This is very similar to the cable model. The MSO have subs and these are made available to the cable programmer, i.e., content developer. However, this parallel model has a major difference with the one proposed here. Cable MSOs pay for the programming they carry on a per sub basis. This is a reason they are evaluated in the markets based on cash flow and not the number of subscribers.

(3) Significantly expand the functions and services that are enabled in the home to broaden the economic base for cost recovery.

Two examples of this are management of cable carriage and demand side power management. With enough homes under contract Aliunde has the potential to seek bids on television programming. Be it cable or satellite, Aliunde does not care. All of this could be managed externally and supplied to the residences. With this Aliunde could get a cut of the action. More importantly, if the RG and home network participated with home power management there could be significant reduction in costs and thus a payback effect of direct benefit to the consumer. One of the few places

in the US where the power and cable provider are the same its managing director has said:

"Let me control the water heater and I will give you HBO. Let me control how you use power to your house and you get cable free."

Unfortunately, accomplishing this level of control is well outside of most homes, the equipment in them, how power is managed and the power utilities.

(4) Embed the RG and home network into the home.

The consumer pays for the infrastructure and gets a home which is much more flexible to the resident's needs. As we saw with Aliunde, this is effectively only happening with new homes and high end homes at that. This is in the earliest stages of development. Yet, the argument is compelling in the broad scope of what possible. This includes the ability to manage services, gain favorable conditions for services, create communities and provide superior home and community networking. Now, premium services take on a whole new meaning because they fit into a larger context and at the same time are of greater value to the home residents. Within this context an important market shift has taken place – in these homes the consumer is in greater control of the environment they live in and thus it is more enjoyable and more valuable. Under these conditions it is not about premium services or bundles but a technology supported/enhanced living environment. That, we believe consumers will pay for.

As we look back at 30+ years of efforts to create more responsive and functional homes using technology it is not hard to see why progress has been so slow. In spite of the pace of technology

many homes do not even have coax cables for video distribution. With the RG and home computer networks a new threshold has been reached both in terms of technology and the potential it has. But the picture is much larger than this – it is about communities, homes that are more livable, and making technology disappear behind the walls. In large part, this can only effectively happen in new homes. No wonder it is so difficult to effect major changes in home lifestyle and the role technology plays. The market is on its training wheels.

Home Networking Congress
www.iir-telecoms.com/homenetworks

0113.2 Residential Gateways

***CopperCom and 2Wire Achieve Interoperability Compliance For Toll-Quality Voice Over Broadband
(February 26)

CopperCom, a company that is creating voice services over broadband, and 2Wire, a provider of residential gateways, have announced the completion of interoperability tests for 2Wire's HomePortal residential gateway and the CopperCom Gateway. This compliance assures service providers, such as ILECs, CLECs and ISPs, that 2Wire's HomePortal product line achieves compatibility, network performance and toll-quality voice for delivery of reliable Voice over Broadband (VoB) solutions to residential DSL subscribers.

To qualify for compliance, 2Wire's HomePortal products needed to complete a series of tests, including bulk call generation, voice and data QoS, as well as TR-57-compliant impulse noise tests to measure voice path quality—ensuring the delivery of toll-quality

voice over broadband. The 2Wire HomePortal products completed
bulk call generation tests, verifying that the residential
gateways have the performance capability to simultaneously
complete multiple calls on multiple ports under maximum load.
Additionally, QoS parameters were measured during maximum data
throughput testing, ensuring that data bandwidth was adjusted and
voice traffic prioritized without any degradation of voice
quality on converged voice and data circuits.

http://www.2Wire.com
http://www.coppercom.com

0113.3   3D and Digital Content Creation

***Virtue3D Announces "Developer Zone" Content Partnership
Program
(February 28)

Virtue3D, a provider of 3D delivery and rendering solutions for
the Web, has announced the Developer Zone, an 3D development
partnership program designed to accelerate the use of 3D
technologies for online merchandising, thereby improving the
online commerce experience. The program encourages and supports
Web content developers who design 3D content through a mix of
training programs, marketing assistance, project referrals and
reseller opportunities.

Virtue3D develops 3D web merchandising applications for various
vertical markets. The Developer Zone is an effort to spur
development of 3D content by expanding the pool of available 3D
development experts, particularly those who develop content for
online retailers. The company expects this to boost the supply of
3D content, which in turn heightens realism and provides

consumers the most valuable online shopping experience yet
available.

In launching the program, Virtue3D also announced strategic
relationships with 14 Web development firms, including Hybrid
Concepts, Kaon Interactive and MindGel.

Virtue3D's Developer Zone focuses on both technical training and
marketing for 3D content development firms. The program is
designed to train content developers to use Virtue3D's set of 3D
optimization and Web delivery tools, then provide marketing
assistance developers need to introduce the value of 3D for the
Web to their clients.

Technical training -- Content development classes, which Virtue3D
offers at no charge, can take place at developers' sites or
training modules can be downloaded from Virtue3D's Web site. In
addition to basic training, Virtue3D provides access to its
application programming interfaces (APIs), a monthly newsletter
with tips on content development, and private online seminars on
new product features.

Marketing assistance - Developers who are trained and certified
are eligible for introductions to Virtue3D's clients. Developers,
along with links to their Web sites, are listed on Virtue3D's
partnership page and provided with placement of 3D content
developed with Virtue3D's tools. Certified developers can also
participate with Virtue3D in joint news releases, co-op
advertising, marketing and various promotional activities such as
road shows and seminars.

http://www.virtue3d.com

***Nothing Real Announces Launch of Beta Testing Program for
Tremor Compositing Solution
(February 27)

Nothing Real, a high-end compositing software provider to the
digital content creation market, announced that the Tremor
compositing system will be entering worldwide beta testing.
Tremor is modeled as a front room, client-based solution,
engineered to handle demanding needs of HDTV, commercial video
and broadcast production professionals.

Tremor offers a complete solution that is built around a
simplified and streamlined interface. It incorporates technology
based on the rendering engine of Nothing Real's Shake, a powerful
rendering engine. Tremor will be sold as an integrated
compositing hardware/software solution.

Tremor Version 1.0 is an open, customizable compositing solution
designed to integrate into a facility's existing workflow. Tremor
features function in a bit-depth and resolution independent
environment.

Tremor highlights include the following:
  A real-time I/0 in 601 and HDTV format, including 1080p24.
  Vector-based procedural paint
  Tracking/stabilizing
  Two industry keyers, Keylight from the Computer Film Company
and Primatte from Photron, will be bundled
  Color correction tools
  Edit Decision List
  Asset management
Plug-ins - initially be available from Ultimatte, The Foundry and
Rising Sun Research

Tremor 1.0 is scheduled for release in April 2001 as an
integrated software/hardware solution running on Hewlett-Packard
computers with storage supplied by Ciprico. It will be available
directly from Nothing Real and from various international
resellers.

http://www.nothingreal.com

0113.4 Television

***PBS and Triveni Digital Announce Interactive Television Trials
with Scientific American Frontier
(February 28)

The Public Broadcasting Service (PBS) and Triveni Digital, a
solutions provider for the management of enhanced data and
metadata in digital broadcast streams, have announced a
partnership for trials of PBS enhanced programming in four
episodes of SCIENTIFIC AMERICAN FRONTIERS airing on local PBS
stations beginning March 27th.

The trials will be the first digital terrestrial (over-the-air)
broadcast of interactive TV enhancements using the Advanced
Television Enhancement Forum (ATVEF) Transport Type B
specification. ATVEF Transport B allows the enhanced content to
be broadcast with the program, rather than requiring a connection
to the Internet, thereby speeding up the delivery of the
enhancements to the viewer.

Seven local PBS stations will participate in the trial - WETA
(Washington, DC), OPB (Portland, Oregon), NJN (New Jersey), MPBC

(Lewiston, Maine), TPT, Twin Cities Public Television (St. Paul/Minneapolis), WHYY (Philadelphia), and KQED (San Francisco).

Enhanced streams with additional information about the program will be placed within each episode of SCIENTIFIC AMERICAN FRONTIERS beginning with "The Bionic Body." Program-related enhancements will be encoded and distributed via satellite through PBS to member stations. Additional enhancements, customized to local audiences, will be inserted into the local broadcast of each participating station.

Triveni Digital's SkyScraper data broadcasting systems will be used by PBS and the seven participating stations. The SkyScraper DataFab provides tools for a content provider like PBS to schedule, insert, and manage enhanced data securely.

The SkyScraper DataHub provides the broadcaster tools to allocate and manage bandwidth usage. The DataHub may transfer IP packets to an IP-MPEG2 gateway, which encapsulates them into MPEG2 transport packets and hands them off to the broadcast mux; or the DataHub may encapsulate the data into MPEG2 packets itself and hand them directly to the broadcast multiplexor. The multiplexor and transmitter merge the data packets with the video program(s) and broadcast the complete transport stream.

Zenith is supplying the ATVEF-enabled digital television set-top boxes for 100 trial participants across the various markets. The set-top boxes will receive the over-the-air Advanced Television Systems Committee (ATSC) broadcast, display the program information and user viewable enhancement information, and store the program enhancements for use by the viewer either during the program or at a later time.

Other partners in the project include The Chedd-Angier Production Company, producing SCIENTIFIC AMERICAN FRONTIERS and the enhanced content; Wavexpress, providing an e-commerce and interactive television platform; Agilent Technologies, producing an enhanced underwriting message; and Nielsen Media Research, conducting viewer research and analysis.

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