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Interpreting Technology and New Media

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A Most Satisfying Experience When DVD and PVR are Combined

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Do you want to have the maximum digital-age DVD quality entertainment experience with your favorite videos, sports, live TV and photos available when and as you like them? It's real easy if you own a DVD recorder combined with a personal video recorder (PVR) such as a TiVo, all packaged conveniently and neatly in a single user-friendly plaything. If it also plugs into a state-of-the-art HDTV and is able to connect to your home PC and the Internet, then media bliss is truly yours.

Is this a real possibility, a digital entertainment dream coming true, or just an impractical technical slipstream? For, as many have recently noticed, in the nearby shadows could be lurking a few of the usual suspects representing self-destructive forces, who at times might even consider eating the cow to prevent us from drinking the milk — unless we play the game by their rules.

You know who we mean — a few troubled Hollywood insiders and their antagonists from time to time, the self-appointed gatekeepers from cable MSOs and broadband providers. As an example, at the recent BroadbandPlus Show (formerly, the Western Cable Show) Brian Roberts, CEO

"...Brian Roberts, CEO of Comcast+AT&T, and the show's keynote speaker, called TiVo a 'Napster'..."

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of Comcast+AT&T, and the show's keynote speaker, called TiVo a 'Napster'. Outrageous! Dangerously enough, these guys are typically well wired into the Washington scene. While they praise capitalism and the free market, they crave a Washington 'lockup' of their competition. One might even suspect that some live in the neighborhood, have a key into the back chambers of Congress or access into the old Clinton Hotel — now known as the White House.

So, in a true Hegelian sense, the antagonists and the proponents are arraigned in a manner that promises on the one hand a great new consumer experience at a fair price, or, if one or another commercial interest fails to get the deal it demands, the chance that another

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exciting digital dream is cut down before its prime. Therefore, while there is still time, we media lovers need to delve into the DVD + PVR opportunity. If possible, we must conjure up a reasonable compromise among the competing and warring commercial interests, so as to bring about an agreement that nurtures and enables the promise of a fully featured DVD + PVR that can be connected to an HDTV, a PC and the Internet.

THE 'NEXT BIG THING' — MULTI-STREAM DVD + PVR

The failure to locate the 'Next Big Thing' has troubled media sages and corporate bigwigs alike. Interactive TV (ITV), Personal Video Recorders and Video-On-Demand (VOD) have so far all fallen wide of the mark, much to the dismay of media leaders, investors and technocrats alike. Now, with NTT DoCoMo, Nokia, Motorola and many others standing anxiously by, are we in for a similar disappointment with multi-function video and Internet enabled cell phones and PDAs? Let's hope not.

One major reason investors and the financial markets have lost so much confidence in high-tech as of late, is due in large part to the fact that industry marketers have repeatedly failed to accurately gauge the consumer's true nature — especially his or her real wants and needs. The mounting financial losses now running into the trillions of dollars, is the market price to be paid for what many feel was an abundance of misjudgment and greed. While ITV, PVR and VOD each continue to be heralded as a 'Next Big Thing' with billions invested in their infrastructure, consumers worldwide have quietly purchased nearly 100 million or so DVD players — and DVD recorders are now exploding on the scene.

As Adam Smith viewing the recent past might have observed: "It's all about honest economics and free markets, give them what they want and charge them a fair market price". Yet, we suspect there are a few Darth Vader types still hanging around D.C., looking for a government rules tweak or two. Visualize those Michael Eisner/Jack Valenti/Jamie Kellner look-alikes who are still roaming Constitution Avenue — with a copy of the Digital Millennium Copyright Act (DMCA) in their back pockets.

A nightmare scenario for the media and entertainment industries arises from the imposition of further onerous intellectual property control schemes that all fail, yet manage to alienate their customers, the public, more and more. Such a process is likely to willy-nilly violate the public's right of Fair Use under copyright law, while still

allowing true criminals, hackers and digital pirates to overcome their Digital Rights Management (DRM) schemes. After years of failing to block these pirates, some in the media still fail to realize that targeting their own consumers with more and more draconian measures will not stop

the bad guys, but will continue to frustrate their viewers. Is that any way for them to prepare their public for their 'Next Big Thing'?

So then, what is the 'Next Big Thing'? Some clues may be found in products that are close to, but perhaps not quite there. One good place to look is to search among the bland evolutionary products that offer promise, but may or may not represent a synergistic new combination of features and function. One such example is what is known as the 'All Player' device, a combination DVD player and VCR in one box. As prices decline, this journeyman device may well become a video rental addict's closest companion; however, man does not

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live by rentals alone. So this is probably not it, at least as far as we are concerned.

Enter the digital media recorder, as described in a November 14, 2002 piece on NYTimes.com, entitled: "TiVo Rivals Add DVD to the Mix," by David Pogue. It previewed the intriguing RCA Thompson and Panasonic new product offerings combining DVD and PVR. RCA is about to launch its Scenium DRS7000N Digital Media Recorder (DMR) and Panasonic is ready with its DMR-HS2 device. Separately CMS NewsLine has learned that Pioneer has such a box in Japan, and Motorola — but not Scientific Atlanta — could have one up its sleeve. When three or more of the world's leading consumer electronic firms come out with convenient combinations of recordable DVD plus PVR, we had better all start paying attention. While none of these products is yet fully on the mark as we see it, each with a little tweaking might become a valid precursor to the 'Next Big Thing'. In fact, the Toshiba RD-X3 model available next year in the Japanese market may be the most advanced of this initial crop of DMRs.

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REALITY CHECK

All one has to do is follow the daily struggles of such giants as AOL Time Warner, Disney, Viacom or JDS Uniphase to see how misdirected at times many of us have been, when attempting to make sense of the new electronic medias and associated technologies. Old media and new media forms seem to clash in a cacophony of claims, legalities and accusations, while the public and the investment community continue to pay and pay. Yet, from our perspective we can still identify some principal realities and trends that stand out and warrant notice:

- Cable and Satellite TV are extremely popular.
- CD music is a big hit throughout the world.
- DVD players are an astounding consumer electronics success.
- VCRs enrich the public experience and make a lot of money for Hollywood.
- Stand-alone PVRs such as TiVo and ReplayTV are not yet a big hit.
- People very much want to avoid the punishment of excessive TV advertising.
- Much-hyped VOD is still far from a big market success, as is Pay-per-view.
- 'Headend PVR' requires studio support before it can be enabled by cable MSOs.
- Cable MSOs strongly prefer Headend PVR to 'open market' — let the consumer have a bit of freedom — TiVo or ReplayTV type PVR.
- Cable MSOs prefer VOD to PVR partly due to its lower capital expenditure requirement.
- Consumers want to control, edit and record some of the content they consume.
- The trend toward an all-digital media does threaten the rights of the public.
- The focus on intellectual property rights continues to gain momentum.
- Lean-back TV and lean-forward PC activities can coexist within the home.
- Central planning and control, as in government mandates, usually fail in time.
- To drive demand and achieve acceptance, DTV/ HDTV badly need DVD.
- The debate, over what is allowable and proper, is primarily among competing commercial interests, who tend to ignore the public, its rights and its wishes.
- Large capital investments are still racing ahead of market trends and understanding.
- The consumer will ultimately make those who don't heed its wishes, pay dearly.

Within this context, the solutions to the digital media mess are not to be found in Washington DC. They reside in the thoughtful implementation of new technologies in a manner that enriches the public's experience and frees up people's time to do what they want. Consumers will pay all that is required to enable the improved lifestyle that some new electronic marvels portend, as long as they get what they truly want. Not much controversy here, give them what they want, do not box them into corners or take away any of their freedoms and they will pay what it is worth. Real simple.

BEHOLD — THE 'NEXT BIG THING'

DVD is a runaway hit of maximum proportions, so it is high time for the principal players in the media to acknowledge that the way forward should start with the DVD recorder/player. It is a most economic device, which provides a very high quality user experience and sparks the imagination of young and old alike. As it usually makes sense to focus on areas of proven interest to consumers when looking to exploit the many possibilities emanating out of new technologies, it makes powerful sense to start with DVD media and build a new multi-function machine around it. Then with broad consumer interest and support, it may again be possible for the high-tech industries to seek out the road to Eldorado and discover the real 'Next Big Thing'.

All the talk about standards, formats and interoperability as with MPEG2, IEEE1394, DVD-R and the like is a lot of mumbo jumbo that while of great importance, tends to distract the public and industry leaders alike away from the deeper underlying issues that truly need resolution before any 'Next Big Thing' can emerge. What the public seems to want and need is a recordable DVD

+ PVR device that can economically and conveniently stream many categories of content. People could fall in love with a 'Multi Stream Machine™', or, more personally, their own 'My Streaming Machine™', or MSM™ connected to an HDTV. Starting with a DVD + PVR platform one needs to add some carefully selected additional capabilities, features and I/O connections to complement and complete a user's experience, to realize the concept of MSM and position this media player closer to the heart's desire of the consumer.

INSIDE THE MSM ENTERTAINMENT BOX

Let us consider what might be central to such a machine. Once a 'Multi Stream Machine' contains a recordable DVD, it surely can benefit greatly from the inclusion of a fully functional high capacity hard drive in which to store audio, video and other content for later viewing or editing on a TV or PC. The hard drive can hold raw footage prior to the editing and assembling of DVD recordings — say, of family albums, videos, records, and the like. The MSM will certainly need to offer user-friendly software and concise on-screen menus that allow convenient editing of home videos and audio CDs. Furthermore, a front panel Firewire port will be required to allow Dad to digitally transfer 'Andrea's' violin concert from his DV camcorder with no loss in quality — either directly to a DVD or to the hard drive for editing.

Having a hard drive in place it is then also natural to add the software functionality of a TiVo-like system, including the ability to record, pause, time shift and fast forward live and recorded information such as material from a DVD, TV or PC. All surveys have shown that once a home viewer gets a hold

“What the public seems to want and need is a recordable DVD + PVR device...”

of TiVo, ReplayTV or similar PVR device, they just love it — and they never want to give it up. After all, with personal video recording and viewing, entertainment in the home then takes place on a ‘time is elastic’ basis. You watch the TV fare you want, when you want to (time-shifting), while experiencing flawless trick-play and other great PVR features that enhance your viewing experience — such as recording every episode of your favorite program automatically, even if the broadcast schedule changes.

Even with all of these media manipulating capabilities, the MSM is still missing a few capabilities needed to allow it to become a total media center for the home. Connectivity is essential to convince consumers to use a single device as the caretaker of their entertainment experience and their family archives. While some consumers may find convenience in dubbing to and performing rudimentary editing on a single box — in the comfort of their living room — others will continue to prefer the powerful editing and image enhancing capabilities available only on a personal computer. Hopefully, next-door in the den sits a Mac or PC, sporting megaflops of CPU power along with I/O ports a plenty.

Since superior video editing can be most effectively performed on a PC as opposed to a set-top box, it would also be most convenient to have an Ethernet (wired) or a WiFi (wireless) communications connection from the MSM to such a home PC. This would make it possible to use the content editing software available from Adobe, Ulead or Virage to greatly improve the process. Such software includes the ability to ‘story board’ and ‘paste up’ the raw video footage and add titles, special effects and a musical sound track as a fine way to enhance content and give it a professional feel. Afterwards, a permanent

DVD of the final footage could be cut using the DVD record feature of the MSM.

Sadly, the full functionality of the MSM currently exists only in the minds of our editors. Shortsighted planning committees at the consumer electronics manufacturers continue to cave under the feared and impending wrath of Hollywood, and so true network connectivity does not exist in the current crop of announced new digital media recorders. A shame, as so much information streams in and out of PCs via the Internet, it would be very helpful to be able to connect the DVD + PVR machine directly to the Internet, or at least to a PC. Similarly, a connection into the cable or satellite TV world via the TV set-top box and its conditional access filters is a must. With these capabilities in place, the MSM can have direct access to the open network known as the Internet and to the subscription based closed networks of the MSOs.

“...consumer electronics manufacturers continue to cave under the feared and impending wrath of Hollywood...”

Last but not least among capabilities needed to fully empower a true MSM so it can achieve commercial success, is to provide access to an Electronic Program Guide (EPG) such as TV Guide or others, either as a stand-alone feature or through two-way communication with a

cable or satellite set-top box. This feature enables the convenient viewing and recording of TV programming with the push of one button. Unfortunately, the folks at Panasonic showed a VCR mindset when they omitted an EPG in their DMR-HS2 machine. These consumer electronics gurus somehow forgot that Americans are often unwilling or unable to record TV programs via VCR-like instruction sets. Without an EPG and the means to trigger actions off such a guide, their digital media recorders are partially crippled and short of a true MSM player.

Finally, to fully grasp the possibly central role of an MSM we must consider the critical inputs/outputs (I/Os) of the machine. Gatekeepers, territorial players and some miscreants may prefer to block the use of this or that communication or back channel. Say, keep out a USB connector, Firewire or Ethernet port, for God knows what shortsighted reason! In truth, the 'Next Big Thing' really becomes the 'Next Big Thing' when it can connect in and interoperate with the home game console, PC, telephone, stereo, set-top box, security system, PDA, and TV. Why not? It's time to get real! Perhaps some courageous and innovative manufacturer such as Toshiba will offer an Ethernet port on a future version of their digital media recorder — for sale in the United States.

Rather than tying up the talented hands of the CE manufacturers and disabling new machines because one or another service provider fears losing the means to effectively charge for his product offering, why not let the free market determine what new revenue models do apply? In the future when Open Revenue Channel Access™ (ORCA™) is available equally to all purveyors of content, products and services, the open market can ferret out the winners from the losers. Separating the TV from the PC or the DVD and so on, is not a proper methodology for empowering a free market media economy. Just the opposite is true. The answer lies in an ORCA system, not in limiting the I/O ports on the MSM box.

THE ON DEMAND PARADIGM

When that ancient paragon of computing wisdom and virtue, IBM, recently announced the coming of On-Demand Computing on a Grid of ubiquitous machines, on-demand as a concept reached universal dimension. It is

now, and henceforth, will be a part of the new catechism of modern electronics. If you do it right, you can now hope to make it an on-demand experience in the electronics world. We are on the verge of true on-demand entertainment, on-demand computing, etc., in a comprehensive on-demand electronics cyber world in the office and at home.

While there are many who advocate a media universe where the greater part of all content and information resides in centrally located computer-center servers or MSO headends, the public also still wants to own things, make its media palpable, duplicate content and carry discs around. This applies to music, video and other content. Paper books are still popular, as are CDs, DVDs and other tangible manifestations of content. This is what the public wants and is what the public will get. Or else!

Locking up the world of information and entertainment within centralized computers and media servers, to be doled-out only in digital forms on-demand is merely a partial answer. Those who think otherwise are in for a surprise. While VOD and SVOD will enjoy success, their achievement will pale in comparison to recordable DVD + PVR based home systems. Think for a moment if you will about the phenomenon of baseball trading cards — they do not represent any real need — but they are truly wanted. People like to own some physical manifestations of content outside of cyberspace devices and networks. It's an atavistic thing, you know.

For these reasons the MSM device as a DVD + PVR device will contain a combination of digitally encoded bits and bytes within hard drives, RAM and other electronics, but it will also enable the creation and playing of portable 'real' DVD discs. This is what

*“People like to own
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manifestations of
content outside of
cyberspace ...”*

people want, in addition to access to the great big blade-carrying remote servers and routers that dish out the remote on-demand cyber 'stuff'.

BUSINESS MODELS & POSSIBILITIES

The On-Demand world is also about the economic models that underlie the struggle for survival of companies such as Sony, CBS, Ucentric and Comcast. Arraigned at times against one another are the consumer electronics houses, content creators, software vendors and service providers. Although they may in truth be more complimentary than conflicting, they still find cause to jostle one another in their struggle for greater power and prestige.

TV is but a small industry when compared to the food, energy, defense and automobile industries. Yet, as television is a key part of the electronic media, its power, prestige and influence greatly outweigh its economic size. Thus, many of the mightiest corporations seek to control aspects of TV and other electronic media. They also desperately seek better economic models. All the while they press the government to grant them ever greater — perhaps what some might even consider unreasonable — rights over the public's media, as in the new copyright act or DMCA.

There are transaction fee models versus subscription fee models, say VOD versus SVOD. There are also retail 'boxes' — where consumers retain a greater degree of choice and freedom — versus embedded systems in MSO owned TV set-top boxes. There are many varieties of proven economic models that help sustain the greater multimedia and electronics economic game. Some offer little freedom, control and choice to the consumer, but then necessitate vast capital expenditures on the part of service providers and their kin.

Others embody the opposite condition, little hegemony to the commercial interests in a consumer electronics based world that is far less capital intensive to the business interests involved.

To their consternation, the MSOs and the content houses don't seem able to have their cake and eat it too, not yet anyway. So off they go to Washington to organize PACs, hire PR firms and petition the FCC, the Congress and the Courts. There they plead for what they probably do not deserve, greater control over the public's media along with ways of achieving it all at a lower capital cost. For if they can somehow get the consumer electronics companies to abandon the consumers — and their constitutional rights — and only sell devices that are wired in ways that give the MSOs full control, then the MSOs will truly have won a great victory. It reminds one of ancient Rome.

It is in this arena that the 'Next Big Thing', the combination DVD plus PVR, the MSM box, can become a big success or be neutered and rendered a stillborn. Left to develop naturally, the MSM will give the public what it wants: a truly new 'Most Satisfying Experience'. The MSM can also greatly enrich the commercial interests. If only more business firms believed in Adam Smith's ideas and just let the free market rule. Long life to the DVD + PVR as an MSM fun machine!

[Mr. Spock, of Star Trek fame used to say: "Live long and prosper." Perhaps we should name MSM in his honor. — Ed.]

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At CMS NewsLine we specialize in providing industry professionals and corporate clients with in-depth analysis of technology and business news that enables a competitive advantage. Our focus is on broadband, convergence products, on-demand services, new media and emerging technologies and markets.

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Kalsow's PPV: Publisher's Point of View "Validating the Middle Ground"

■ Is MovieLink a make-believe entity that is really meant as a stalking horse in the bargaining game between the cable and satellite MSOs and the studios on VOD and PPV content terms and pricing? We think so. Or is it just a way to kill off the nascent video streamers such as Intertainer? We think so too. How about a means of preventing Microsoft and Intel from entering the content distribution e-business. Perhaps true again... shame, shame!

■ The Ucentric Multi-TV PVR may be just another twist in the death rattle of a technology that has shown that it cannot stand on its own. Perhaps it can only economically thrive within multifunction consumer electronics devices combined with DVD and the like and attached to a TV and a PC. Stay tuned.

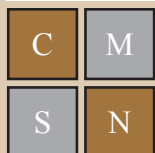
■ Contrary to media companies seeking incremental distribution, movies on PCs seem to be a very limited and misguided combination anywhere except in college dorms and such places. Movies belong on big sparkling HDTVs shown there with the clarity, color, detail and aspect ratio they deserve.

■ The impact of PVR on TV advertising, while significant, will mainly convert TV advertising from a forced to an elective experience, as in newspapers, magazines and billboards. How much more ad-skipping will it mean as compared to today's channel surfers, mute button mashers and refrigerator raiders? Some but not as much as we may think. In fact, the PVR may have a greater impact on programmers and content producers. So we all better stay tuned, and continue reading those research reports.

■ Digital Asset Management Systems — Sounds like yet another place for some MSOs to pour out their remaining gold and again lose their way. Better they should leave this one to computer geeks and specialty houses and concentrate instead on reducing churn and improving customer satisfaction. Remember the cost and futility of past ITV, Voice-over-IP, PPV, VOD and now PVR projects?

■ Partitioning a cable customer's set-top box hard drive to include a major segment that contains an MSO's locked-up content is a heck of a good way to reduce network and head end infrastructure investment and service nightmares. So is downloading content to the subscribers during off hours.

[Your mileage may vary. —RGK]



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Every month you will enjoy thought-provoking analysis of the significant issues driving the growth of new media, technology and entertainment.

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