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IPTV In The Media Wars

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Remember the first time you saw a graphic website on your PC in the early 1990s? Perhaps even before the phenomenon known as Netscape took over? Until that change of form from text to graphic controls everyone typed in commands on their PC in order to use the Internet — as the available graphic tools were clearly too clumsy and too slow to be popular. The idea that the Internet would soon

generate billions in commerce and become the primary public information utility was only a dream back then. Yet, as Metcalfe's Law teaches, the value of a network is proportional to the capabilities of the machines on the network — meaning

that size and power really matter. Consequently, as webservers and websites grew by the millions, consumer usage rose exponentially and the Internet became all the rage. Guess what, with the new phenomenon of IP enabled everything the power of the network is exploding again. As a result the new weapons in the war of the worlds between cable and the Telcos is IP enabled IPTV, IP Video and Voice over IP.

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Kalsow's Back-Channel offering candid comments from the publisher - returns next month.

Each month you will enjoy commentary on the state of the industry, new media and technology.

CMS NewsLine accepts no advertising, so expect our point of view to be no-nonsense, and maybe even a little controversial.

"The idea that the Internet would soon generate billions in commerce and become the primary public information utility was only a dream back then."

When Bill Gates made his much-publicized switch converting Microsoft into an Internet-centric business half a decade ago it greatly helped to give broadband and streaming far more currency and cache. Similarly today's VOD offerings

on your PC may seem puny, clumsy and meager, but never fear as real growth is coming — and its name is IPTV and IP Video. Once again viewers by the millions will discover that their choice has increased by orders of magnitude and that zillions of pieces of VOD content are readily available to them. Indeed as the remaining technical obstacles and user interface barriers are being breached the flow of high quality motion picture and sound content is becoming a 'bit' torrent. Even peer—

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"Validating the

Middle Ground"

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to-peer technologies like Bit Torrent will have a big role to play. Consumers will switch to IPTV service because it offers them greater value than cable or satellite service can provide simply because of the almost unlimited choice it can make available. This massive pyramid of power will be easy to use as it is driven by the great new search engines and advance program guides from the likes of Google, Yahoo and of course the omnipresent Microsoft. Herein we explore how content's long tail along with the growing role of the PVR and other aspects of media are fueling another great wave of change.

n Inner View of IPTV — Last month's article on IPTV examined the basics of IPTV and its place in the cable—telco fight. It concluded that IPTV is likely to become the dominant

television form and distribution strategy over the mid to long term. Especially for the prime demographic of mass-market consumers — i.e. the newly trained, newly awakened, ondemand, in-control, and information-communications-entertainment seeking folks the

business community prizes. Patterns of distribution and consumption worth \$205 billion are at stake (Parks Associates). Some service providers in cable and elsewhere, with their massive investments in standard CATV and possible bias against IP, may well find themselves heading down the wrong road. The argument for IPTV over current CATV and DBS standards is technical, economic and qualitative — and in all areas IP seems to have the momentum and the edge. Overall, the IP method now upgraded to a more advanced IPv6version has advantages over current CATV and DBS such as more intelligent switching, more efficient bandwidth utilization and greater consistency for the software developers. Herein we take a look at how IPTV may change the landscape

for Information, Communications and Entertainment — the ICE of modern life.

Many knowledgeable folks still suspect that cable with its walled garden and its big pipe will be the likely winner in the game for media dominance. But not so fast as there is more to this little tale. While some able observers — including an author or two — still fail to grasp the immense paradigm shift that IP is driving — with even more under way. Maybe the makings of a fully connected multimedia worldwide uber alas network! In such a world the trappings of the 'totalitarian' walled gardens of cable are likely to be at odds with the public mood — as they may have found a better way.

You may well disagree with this perspective, especially as you recall the

many failures of VOD and TV on the Internet. After all MovieLink and CinemaNow have struggled mightily. This has given Hollywood pause and concern about IP Video — as it warms the hearts of the cable MSOs executives at

Cox, Time Warner and Insight. Further, anyone who remembers the illfated Intertainer, a pioneering company in the early days of VOD over the PC, with its clever and intuitive user interfaces may still wonder why it failed. Allegedly it was in part caused by a dirty little trick the Hollywood studios pulled on it — as they withheld content but not much news there. Well they probably did — but in fairness all that expensive gear and the complex systems needed to run Intertainer's VOD system back then were also a major factor. Perhaps it was not the right time, as IP technology and the infrastructure were not far enough advanced way back in

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2001. None of that pertains to those who follow in Intertainer's footsteps today — as the technology works well and the cost of capital equipment, systems and operations is relatively low and still dropping. As to those Hollywood bad boys and we don't mean Cagney or Bogart, they are coming to regard the movie theater as little more than profitable PR platforms to promote their DVD, VOD and other products and services. Yes, these masters of the gangster movie genre do get IP Video big time. So do Microsoft, Cisco and Intel and the hungry for resurrection and redemption telephone gang — so watch out.

The economic advantage IPTV has over CATV is due in part to its rapidly expanding and evolving wired and wireless systems and an infrastructure that gets more efficient all the time. Including the price/performance improvements all along

the network's hardware and software systems that enable it. Here, from the likes of Cisco, JTS and IBM is an evolving collection of routers, gateways, hubs, multiplexers, servers, fiber nodes and the like that drive IPTV progress. In the meantime OpenTV and

Microsoft continue to build a better and better software infrastructure. As these are but the givens in this revolution, we now turn to the more subtle aspects of IPTV rising, including the purely qualitative aspects of advanced media that, for the moment at least, seem to favor IPTV.

he Long Tail of Content Matters

— The massive amount of content that is now available from public, commercial and private sources means that

a great abundance of media is accessible by the consumer — as a long tail of content new and old. Yet Pareto, the Italian economist, famously observed that only a small fraction of a population often accounts for most of the action. This so called 80/20 rule applies to the selection of media content as 80%+ of the usage is for less then 20% of the content. For books, movies and video games this is at times more like a 90/10 rule. At the same time, only something like 20% of movie revenue comes from box office receipts (NY Times). Other distribution channels account for the rest out of later release windows for DVD, Premium DVD, VOD, pay-per-view, premium cable, basic cable and even free TV. These and similar examples help illustrate the importance of media content's long tail to IPTV and how it affects the competitive struggle.

We find similar distribution models in play for printed matter — out of various sources

and means of delivery. At any newsstand the large number of publications in sight — with the number growing every year — can seem excessive to many of us. One can only marvel at the economics of a niche business wherein no more than

a handful of the magazine titles enjoy more than a few hundred thousand readers. Looked at more closely we notice that quite a few of the magazines and periodicals are out of a handful of publishers who cluster these titles to achieve an economy of scale. The many cross—media properties of a Scripps, Hearst, or The Tribune publications and electronic media are packaged together for just this reason. In the electronic variety Rainbow Media with its on—demand Mag Rack offers a similar

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model as it aggregates many niche titles to satisfy a fickle public and its broad reach of taste. In a way Mag Rack and its innovative programs and program blocks recreates the magazine stand experience, only in a video server format. Its content is distributed by TVN, North America's largest cable VOD specialist. Sadly it is available on few systems and only 3.5 million subscribers out of the 19 million digital cable homes in the US. You might think that Rainbow Media and TVN would bust—out of such a limiting situation and find a way to go on an IP platform to gain a much greater audience.

similar situation is to be found in bookstores and libraries, classic examples of long tail content repositories. While the 80/20 rule applies

to major items of interest, these places continue to offer an abundance of long tail items to sustain their usefulness to the public and keep them coming en masse. Some old favorite independent bookstores and video stores survive by offering thousands of rarely purchased

or rented titles. Vidiots a favorite retailer in Santa Monica, CA is going strong after its 20th anniversary partly because of its long tail strategy. Claiming over 40,000 titles it offers film—o—philes a potpourri of video titles along with books and events so as to stay financially healthy, even in the presence of two nearby Blockbusters. In fact Vidiots started to offer pre—paid discount accounts long before Blockbuster or Netflix caught on. Here again massive content choice representing a long content tail has utility and appeal to the consumer.

Swap meets and garage sales survive in the shadow of Wall-Marts. Boutique stores

of every kind thrive alongside giant anchor department stores such as Macys in great malls. Farmers Markets have made a comeback across the country coexisting with the Safeway and Trader Joes. Similarly eBay along with Tribe and Craig's List exist to serve up the commonplace as well as obscure bargains, and so it goes. All of these distribution methods survive and thrive because they have found an economic way to offer up the long tail to large enough audiences. In fact, the consumption of the big moneymaking top 10% titles is often interdependent with the availability of the seldom acclaimed and often unnoticed remaining 90%. While you may well rent an episode of last season's Desperate Housewives, or Revenge of the Sith, you can also find the classic The Razors Edge or the director's cut of Brazil at your

favorite content boutique.

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Only in an IPTV world can thousands upon thousands of series, specials, old movies, new movies, foreign movies, documentaries, educational programs and the like be made available on-demand,

economically and conveniently. Consumers want their hits and "watercooler" programs that is for sure. But at times they also want Fly-Fishing Tips from the Pro, just before a fishing outing. Even with a client side DVR or VOD from the head-end to upgrade a cable or DBS system, the ability of these networks to offer up such a multitude of content ondemand simultaneously to millions of viewers may be too much to ask. With the IPTV advantage of great bandwidth (soon), better compression, multicasting, superfast optical switching and smart software and common standards for all applications, putting a Vidiots online is

practical and that fly-fisherman can reach out for his or her special fishing lures content at will on the IP. So too the needlepoint people, the cross-country trekkers, the do-it-yourselfers, the Yoga aficionados, the documentary lovers, the fitness buffs, and scores of other niche media users.

What about the 80/20 rule, will it apply to IPTV? At Vidiots we are told that the rental pattern is closer to 70/30 than to 80/20. At Akimbo, the growing media distribution company, Josh Goldman its CEO is of the opinion that once there is a breath of real choice available, then each person's individuality can be satisfied with

content that meets their unique lifestyles. What might end up on 'favorites lists' or on their PVR hard disks may differ greatly from person to person. It is a bit like the many choices individual family members

make when together at a restaurant, where at home they all share the same meal. Is this the end of mass media, as we know it? Where indeed will a new equilibrium be found? Some suggest that 50% niche and 50% mainstream content is not far-fetched in the IPTV world. Only time will tell. As for the 80/20 rule, surely it will remain steadfastly in place for recently minted mainstream content. So all is well with the world, as in: the more things are different the more some people and their behavior remains the same. Yet with new technology some behavior is indeed changing.

NR Enabled On-demand — The Trojan horse of IPTV **L** armament is the PVR or more accurately the IP enabled PVR. Beyond the long tail of content best satisfied by IPTV is the oncoming complimentary role of the PVR — as it soon attains mass-market status. Forrester analyst Josh Bernoff predicts there will be 30 million installed by 2007. By 2009 there are projected to be 38.5 million STBs with integrated DVRs and 10 million more as standalone PVRs. The CEA projects that about 2.6 million standalone and integrated DVR units will be sold to dealers in '05. Dual tuner HD PVR offerings from MSOs and

> satellite operators will become standard as well as affordable by 2006. TiVo's new deal with Comcast and old arrangement with DirecTV should help keep them in the game.

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The ever lower cost of hard disk media storage will no doubt factor into the whole development as well. As storage prices continue to drop, manufacturers and integrators will develop new rich media applications for the PVR and its ever–expanding capabilities. In a year or two we may notice these products competing effectively against the PCs and the Home Servers for the top spot in the home media hub market.

he Sticky PVR — No need for market research or punditry to learn that just about everyone who tries TiVo and TiVo-like personal video recorders or PVRs loves them — just ask a neighbor. Witness the

www.tivocommunity.com experience and its annual conference in Las Vegas as a fan love fest. Even plain old DVRs, without the higher level of personalization of more sophisticated PVRs, boosts customer satisfaction on digital cable by up to 51% and the satisfaction of already satisfied DBS satellite users by some 16%. As for the high level of digital churn on cable whereby subscribers leave cable each month — with DVR enabled STBs this churn goes down from 2.5% to about 1.5%. This means that much expense is saved and market value preserved. Indeed cable is still losing hundred thousands of subscribers per month to DBS satellite service providers. That is a severe blow to cable and its superior fibre pipe and hundred billion dollar infrastructure. However to many its marketing appears

weaker than satellite while in the eyes of the public its service is still said to be a bit inconsistent. Of course cable is working hard to on overcome any remaining QOS deficiencies — not easy for a former oligopoly used to basking in the Washington D.C. sun.

While pausing live TV is the number one advantage of the PVR, time—shifting and ad skipping are close behind. Indeed many who have a PVR are likely to opt—out of a high percent of 3—5 minute advertising pods that interrupt their programming. We may expect that consumer viewing patterns will shift as they become adept with digital recording and its trick—play and search features that alter and enhance the viewing experience. In time audiences will learn to cherry—pick what they watch as they happily skip along through masses of content. It is likely that time—shifting will soon be the normal pattern of behavior

with TV, while live—TV will be relegated mostly to sports and news. Time is elastic and multistreaming will then become the order of the day. All of this represents far more than just a change in viewing habits. Instead, the basic lifestyle of millions of viewers once tethered to a fixed TV schedule of ER, Sienfeld and the like will be permanently altered. With a PVR in place, especially one connected to an IPTV service, the behavior of TV viewer now mimics what people do on the Internet and with broadband as they seek Information, Communication and Entertainment — the ICE.

VR Plus IP Set—top Boxes Power IPTV — With large—scale consumer adoption now inevitable, especially with IP integration

into the STB, service providers are learning to employ the client side PVR to extend and multiply their service offerings. New services with separate STBs from the likes of DAVE TV and AKIMBO do not even

connect to the cable or satellite TV STB. This new way of reaching for IPTV and IP Video content looks to gain traction with niche audiences and with many others as well. It uses the public Internet while bypassing the cable and satellite walled gardens of the traditional players completely. For many service providers this approach represents an ominous threat, as a new way for the public to access electronic media. No PC and no cable box, what a shocker!

Such pure IPTV plays are intriguing, but their proponents are not alone in recognizing the vitality, good economics, standards based means and

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inevitability of Internet delivery. Even today a casual inspection of the back panel of most new model PVRs and many digital TVs will reveal the inclusion of USB and Ethernet ports. These are the very bellwethers of connectivity that allow a PVR box to serve some of the functions of a Home Media Server. TiVo's Home Media Engine developer kit makes this intention clear — with the details to be

understood on another day. Motorola buying up Ucentric, a PVR and home networking innovator, is also a sure sign of what is coming next — pure IPTV throughout the home. In this scenario there is a fork in the

road and its name is IPTV openness and access.

With the Telcos on the march, the CE world growing in importance and the public enamored with broadband and the Internet the defensive posture of some walled gardens is beginning to look quite vulnerable. Indeed it could remind a history buff of the Maginot Line in WWII — wherein with concrete and fixed guns the French intended to hold back the Hun, the Nazi and the history of technology. Well the Romans couldn't do it; the French couldn't do it so why should anyone think that Comcast can? As for cable MSOs who are more forward thinking, perhaps the likes of an Insight or a Cox, only time will tell how they marry their four-way plays with forward facing IPTV.

ombining IPTV + PVR
Features and Capabilities —
Big networks are by their

nature complex, expensive and everchanging in ways that require the massive balancing of traffic and much else to maximize their overall service. Here we have a classic paradox, namely that that which is good for the group or overall system is not always good for the individual, as with traffic lights. Or to be more dramatic, consider the heart pounding situation where most everyday a Marine is commanded to

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walk point, up front of a patrol on an open road in Serbia or Afghanistan. In any such case it is helpful for the individual 'on point' to have some outs — as in a good car stereo in the first example, and an extra set of armor in

the latter case — or some other goodies. That in major and minor ways relates to how the PVR can enhance IPTV. It can bring convenience and extra functionality to a consumer reaching for some media ICE, as in the following:

uto Caching — The PVR with its large hard drive storage device can Libe used as a glorified cache to overcome network bandwidth limitations. Based on user preferences and selections, service providers can download programming onto a "reserved" storage area. TiVo does a basic version of this with its Showcases. It instructs the subscriber's box to tune to a prearranged station overnight and record content, which then appears on the TiVo Showcase menu for on-demand viewing. Expected to roll-out with over 100,000 hrs of programming that adheres to the 80/20 rule, IPTV aggregator DAVE TV www.dave.tv plans to use this approach to preload subscriber IP STBs and media center/appliance, its so called Xport, with the most popular

7

movies and programs so that they are constantly available. The bright folks at DAVE TV and Akimbo think that longtail minded consumers will fork over yet another \$10 per month this way. Additionally via the cache approach, DAVE TV and Akimbo subscribers will also get high quality — read H.264 up to HD — content with little or no waiting. Akimbo will use the Windows Media Player while DAVE TV depends on its own proprietary peer-to-peer content distribution system. Akimbo's current

lineup of 2500 hrs of content is growing fast and looks to be a winner. It is an easy matter for viewers to set their preferences on this system, in a manner similar to the one used by TiVo with its Season Pass, and end up with lots of Turner

Classic movies on their boxes ready to be viewed on-demand.

🕇 treaming and Downloading — Similar to cache but nearer to real time, Starz, Movielink and CinemaNow are pioneering this approach for their VOD/PPV movie offerings. Herein the power of standard based IP technology and some clever application software are combined to make it possible to parse and recombine bits and pieces of video content in near real time in such a way as to let viewers have a smooth and uninterrupted video experience. In the meantime the folks at Blockbuster and Hollywood video outlets are fully aware of their at risk situation from IPTV and VOD. Essentially they look to metamorphose into new butterflies so they may survive. MovieLink and other services have demonstrated that consumers are willing to wait the 5 or more minutes it

takes to download enough of a feature on a typical ("slow not fast it is", says Yoda) DSL or Cable modem in return for full DVD functionality with their PPV movies. Today, when those multi-megabit Fiber-To-The-Home telco installations are still years away, this is a good stopgap approach. With this new method some may wish to proclaim 'I must be dreaming I'm multistreaming'. Now that's IP Video for today and tomorrow.

Note: To counter the VOD services of the

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strategy is to download and cache content into increasingly sophisticated STBs — with large hard drives and PVR functionality. Soon economic terabyte hard drives will become available and that will

make this approach even more appealing. With content protection from digital rights management (DRM) and advance compression methods from the likes of DiVX and Nemo whole seasons of Desperate Housewives, 24, American Idol could be held securely in a dormant state in the STB PVR until the home consumer unlocks it for in-home viewing or to view it in a car or van. Even today with TiVoto-Go TiVo has extended much of its PVR and other functionality to mobile Microsoft players that can be taken on the road. Yes indeed, the times they are a changin'.

Tedia Center and Archiving — IPTV will not eliminate the Lhuman tendency to pack rat and store lots of stuff. Indeed the consumer's unrelenting acquisitive tendencies assure that even with broad IPTV access to lots of content every PVR

will quickly fill with favorites and become a de-facto archive for collectible video content. If you doubt this just look at the mass of old VHS videos still in most American homes. It is also natural and atavistic to add lots of music and photos to the archived bundle. TiVo's Home Media Engine developer tools addresses this tendency. TiVo-to-Go is there to bring much TiVo content to the mobile PC. Here users can readily transfer 'What's On My TiVo' to their PC via a USB connection. It can at least in theory also work the other way around to transfer the video, photo and music content from the PC to the local TiVo for viewing on the TV. Microsoft with its Media Center and its Xbox is vying for media center status,

so is Sony with its new generation of Playstations containing dual HD outputs and room for expansion. DIGEO with its Medio products is also squarely aimed at this coveted living room spot, as are D5 and Mediabolic with their developer tools. So

IPTV and the PVR are dancing together and apart as major enablers of a better more open future.

Backing Up With An IPTV Utility
— Surprise, surprise, contrary to
what most of us are prone to believe
the big secret is out: if you store your best
photos, videos and personal content on a
PC or a PVR you are not safe as their hard
drives do crash and burn after something
like three to five years! Also their nearterm capacity is under a terabyte. Even
more likely than system failure is a loss of
data from such common causes as user
error, virus infections and system
malfunctions. In any conservative scenario

a truly safe backup method is essential. Devices like the Mirra will no doubt play such a role. The Mirra is a simple plugand–play networked attached storage device for the consumer and small business market. It automatically backs–up anything on the local network and has a central online service component to provide online access to files while away from the site. This is a bit like IPTV in reverse and it, to coin a phrase, IP works.

Online central backup utilities such as Streamload and Mac.net will certainly play an essential role in safeguarding content. MSOs and Telcos can if they choose also become back—up utilities trusted with the consumer's prized baby pictures,

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homemade videos and favorite episodes of Seinfeld. In essence, a trusted IP based backup utility is like putting the family album in a safety deposit box with the digital advantage of online publishing, file sharing and copying. For the cynics among us what is in public

storage is fully available under the Patriot Act without court order by many agencies of the Federal Government as well as by dishonest miscreants on the Network. So Caveat Actor — let he who would fully trust such systems beware. A few paper documents is also not such a bad idea.

Dominate TV? — With a bit of dismay the keepers of the many walled gardens where QOS is guaranteed and security is high such as the VPNs watch as the public Internet becomes the new 'free airwaves'. While at present this universal system can be somewhat unreliable and slow, not so for

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long as it is rapidly improving. Today's 30 US million broadband homes service may soon seem like dial—up grade to the wired and even wireless customers of the next generation. These new age telco IPTV subscribers along with their cable MSO counterparts will enjoy the power of the eight—way unfolding play to come. One has only to look at the 20 to 50 megabit per second high—speed systems in Korea, Japan and elsewhere to get the picture. Video in large part will imitate legal music downloading and file sharing in this new

world. Today's short clips of sports highlights on a PC will give way to full blown IPTV viewing. Scripps for one is already applying a bit of this strategy with their pure IPTV companions to HGTV and DIY, dubbed HGTVPro.com

and Diynetwork.com. There, neatly packaged as 'websites', you will find reams of indexed and interfaced long—tail content clips on home building products and services from A to Z neatly extending brands and awaiting the growing mass of broadband users to sign—up.

he IPTV Ratings Numbers Game

To media executives the periodic sweeps for Nielson Ratings is a drug. A point or two can mean the difference between despair and ecstasy. Advertisers feed the mass audience ratings paradigm of ad agencies and media providers by playing along with this sophist game. How much longer can this charade continue? Experienced media producers have now discovered that they can have successful shows with only 100,000 viewers and a rating of no more than .10. That is if they have the right audience and the right niche. Thus on the right occasion even

two football stadiums full of viewers is not a bad sized group to reach out to.

For example Scripps Networks total–day viewership on the Food Channel, its premier network, was only 374,000 in 2004. This would have been small potatoes in years gone by for such a network. Scripps also brags about the 1.8 million monthly unique visits to the companion website to its DIY Network. With the rise of IPTV services online network ad sellers such as Value Click may

find themselves in the TV advertising business. Still the new on–demand in–control IP TV audience is also an audience measurement challenge. What they watch, when they watch it, where they watch and all the rest could be live, time–shifted

and viewed on their TV, their PC, or a mobile device like Gizmondo. They might opt—out of commercials or they might opt—in to see an advertainment of interest. They might accept embedded selling and branding in an entertaining or useful program, or they may not. And when they can do so quickly and easily they might just give up a night of *Desperate Housewives* to watch *French In Action* via IPTV in order to prepare for a trip to Paris. Or at least archive the information on their PC for later viewing on the plane.

there you have it. Having come full circle with IPTV, the long tail of content and the dramatic rise of the PVR we are like Magellan and Marco Polo back where we started. Much may seem a bit clearer after the journey and after sighting one or two

imagined new horizons, yet much remains veiled in the fog of the future. What is sure is that IPTV along with IP Video and Voice over IP will play a major role in advanced media. Also, that the war between the giant Telcos and the major cable MSOs now well underway will be long and brutal. The DBS satellite folks will also continue to play a role, as will the broadcasters, the networks, the technology house, the advertisers, the content producers and many others. At the center of it all will be the IP Standard as a unifying approach for managing electronic content. So if you want standards based ease in the electronic content advanced media world — along with low cost and an open information system all can access — then this is for you. To paraphrase the brilliant James Baldwin of long ago: 'Say it Loud, I'm IPTV and I'm Proud'!

Send a question or comment by e-mail: info@cmsderfler.com

"What is sure is that IPTV along with IP Video and Voice over IP will play a major role in advanced media."

(Leo Willner and Stuart Volkow contributed to this issue. In order to discuss any of these points with the authors, please e-mail them at: leo@cmsderfler.com and stuart@cmsderfler.com)

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—Georgia Pech, Editor]

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