Faultline

The Journal of Quadruple Play Economics

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Key Issues

Intel Yahoo widgets deal catapults them to the head of digital home

- Intel uses new widget architecture to launch its own consumer electronics chipset
- Big internet guns come out in support of offering Widget Channels

Intel used its Developer Forum in San Francisco to introduce an entirely new way of combining internet video content designed to play on a PC browser, with TV sets – producing a brand new processor aimed to go inside consumer electronics (CE) devices, and creating a software framework with existing Yahoo tools to put internet video on a TV, using a widget interface.

There have been few clues from Intel that it understood the digital home at all, but after years of trying to compete with all the CE manufacturers out there it has finally come up with a component that they can buy into and become Intel partners.

This is a little bit like Intel creating a generic TV converter chip which will replace devices like Apple TV for a just few dollars and be integrated into all the devices out there – DVDs, digital TV sets and DVRs. The additional software layer it is promoting with Yahoo puts the icing on the cake and develops a widget style implementation that will drop browser contained widgets onto TV screens, alongside existing TV content.

The processor, although described as based on the Intel Architecture, is a complicated beast, which has a high-performance processor core and integrated graphics, hardware codec support, I/O and other units on a single chip. This is nothing like a PC chip architecture even if the instruction set of the core is the same, and looks like the beginning of a completely new direction for Intel.

Finally Intel has stopped fighting the likes of Sony and Panasonic and begun trying to work with them

The Intel Media Processor CE 3100 is described as for Internet-connected Blu-ray players, advanced cable set tops, modular DTVs, and combines a high-performance IA processor core with leading-edge video decoding and processing hardware, dedicated multi-channel audio processing DSPs, a powerful 3D-graphics engine, a security processor and support for multiple peripherals. It looks more like something that Texas Instruments would dream up and steps very much on its territory.

By using the Intel instruction set the SoC gives access to the library of code built up over the last 20 years including tools, compilers and re-usable Internet applications.

The processor is an 800MHz+ Intel Pentium M processor built in 90nm but it has lots of bells and whistles such as a graphics accelerator and shading engine for faster, hardware supported rendering, and can support a vast array of different memory configurations. Intel says it can handle up to two concurrent HD streams and will decode Microsoft's VC1 video, for all that Windows Media out there, as well as H.264 and MPEG2 for all the traditionally coded cable content. The devices has no support for DiVX, which makes it tough to render all the pirated video which is out on the internet.

Back in 2005 Intel bet on the PC, not the TV, being the centre of the digital home, and tried to invade the sitting room with the ViiV, a PC that could be controlled by a remote control, which it brought to market with a flop during 2006. This took Intel up against all of the CE manufacturers such as Sony, Panasonic and Samsung, and created a rift between the chip supplier and the CE world.

That strategy is now fully reversed and Intel looks instead ready to undermine all of the other invaders of the living room from the PC community, including Apple.

So far none of the truly significant CE manufacturers have signed up for the CE 3100, but there are rumors that Sony and Samsung are in the wings

However, so far, none of the truly huge CE builders has signed up to partner Intel in its strategy, but it can boast local software players Tru2way specialist Alticast; Denmark's DVR marker Futarque; Videon Central, a Blu-ray middleware specialist; VividLogic, another cable Tru2way software house. Hardware manufacturers signed up include Giga-Byte, Tatung and Unihan from Taiwan, while the larger brands wait and see.

But the Yahoo tie up is also a master stroke because it recognizes the work that Yahoo has done with its Widget Engine and widgets, but also turns it into an open architecture that anyone can use, including what Intel calls Content Service Providers (CSPs) or CE manufacturers themselves, laying the foundations for things like an NBC Olympics widget at the next Olympics, or a Sony Pictures widget.

This is an alarming potential change to the entire content landscape and eco-system. Once a new generation of devices are out which can simply identify and play content which originates on the internet, complete with a DRM security system, then it could potentially open the internet content floodgates. Companies will almost certainly decide to put more and more secure content on the internet. The system will make it a simple point and click to put internet video on the TV.

This could provide a unified way of taking internet video to the TV

and that will open TV up to a wider distribution for both major programming such as the major TV series, and for local and themed channels that do not have enough of an audience to warrant them being shown on a broadcast TV channel.

There was a murmur at the Intel Forum that both Sony and Samsung will embrace this technology, but even if they do, in our view, it will take around 3 to 4 years before the device penetration is sufficiently high that this will represent a genuine disintermediation of pay TV providers. If enough devices are out there which can receive this type of content, then TV channels will put more content on the internet, potentially charging a fee, or loading it with high value addressable advertising, and bypassing pay TV operators from cable to IPTV. A broadband line will be all that is required.

If enough devices appear with this technology, then people could get all their TV from the web

That may be a long way off, but gradually pre-loading a widget on a TV set would be similar to pre-loading an application on a PC or a handset, and the device maker would be the route to market, not the cable operator.

Intel even raised this issue in its launch materials, saying that the creation of content-aware widgets could arrange to carry content relevant advertising (not quite as good as advertising which knows demographics, but worthwhile) along with interactive e-commerce services that drive off TV programming. A sponsored TV Widget might have one click responses that register interest in TV adverts.

The chips have not actually been priced as yet, but previously everyone that has come to this market has ended up adding an extra $250 product to the bill of every TV home for a box like Apple TV. Part of the reason for that high cost was the fact that chips which were not designed for this job, had to be adapted to a board level product.

The devices which Intel is expecting are going to be Linux based, with a very small kernel (we presume) Flash loaded, for rapid start up, and will appear extremely simple to the user, with the TV or other device, plugged straight into a broadband line.

Intel talked about CE level

pricing, by which it means a few tens of dollars, which will be eaten up within the existing price of a DVD player or even paid for inside a subsidized cable set top or DVR.

The exhibition at the forum provided a working example of the TV widgets in what Intel and Yahoo called the Widget Channel, and we borrowed the picture across the page of a Sharp TV attached to the Giga-Byte Device, which had a number of widgets loaded.

Intel and Yahoo say they are already working with Blockbuster, CBS Interactive, CinemaNow, Cinequest, Comcast, Disney-ABC, eBay, GE, Group M, Joost, MTV, Samsung, Schematic, Showtime, Toshiba and Twitter, so these widgets will be available in no time at all.

Of course, with a broadband line plugged straight into the TV, interactive widgets will also bring ideas like IM and chat widgets alongside the pure video applications, which Intel expects will enrich the whole experience.

“Working with Yahoo has produced an exciting application framework upon which the industry can innovate”

"TV will fundamentally change how we talk about, imagine and experience the Internet," said Eric Kim, Intel senior vice president and general manager of the company's Digital Home Group. "No longer just a passive experience unless the viewer wants it that way, Intel and Yahoo are proposing a way where the TV and Internet are as interactive, and seamless, as possible.

“Our close work has produced an exciting application framework upon which the industry can collaborate, innovate and differentiate. This effort is one of what we believe will be many exciting new ways to bring the Internet to the TV, and it really shows the potential of what consumers can look forward to."

To help create new TV Widgets for the Widget Channel, Intel and Yahoo plan to make a development kit available to developers, including TV and other CE device makers, advertisers and publishers. The Widget Channel will also include a Widget Gallery, to which developers can publish their TV Widgets across multiple TV and related CE devices and through which consumers can view and select the TV Widgets they would like to use.

Intel also announced the formation of The Intel Consumer Electronics Network, a member-based community of hardware, software and services providers aimed at speeding the delivery of Internet-connected CE devices based on IA SoCs.

Key Issues

DRM Trust Authority to emerge with the blessing of Hollywood

TechCrunch is reporting that the major US studios, with the exception of Disney are all about to endorse "one more push" towards a generalized DRM system which can both support domains and multiple DRM technologies. It is being referred to as Open Market and follows on from an initiative taken by Sony Pictures earlier this year.

What TechCrunch and others are saying about this move is that Open Market is a set of policy decisions with a software and services framework that will allow interoperability of both video formats and DRM schemes.

The idea sounds rather woolly as stated and we suspect that there has been some confusion in the telling. The scheme is supposed to be officially announced later this month and will involve everyone except Disney which will stick for now with Apple's FairPlay, from leading shareholder Steve Jobs who also controls Apple.

The rumored Open Market is almost certainly based on Sony owned technology from Intertrust

The Coral Consortium has had a scheme for DRM interoperability for several years now, and the DLNA said a year ago that it might endorse it as a standard, and then went terribly quiet. Coral both supports the concept of a domain and also for DRM interoperability.

But last October, after it appeared to hit a roadblock, Coral came up with some new concepts and we think it is these that are seeing the light of day here. The thing is that a single service operator, someone like Nokia or iTunes or more likely Vodafone, has always been able to run their own eco-systems with multiple DRMs, because they can have a common application decide who had rights for any given piece of content on any given device, and then trigger the release of a decryption key from any one of several DRM servers. So an OMA DRM system could run alongside a Windows Media DRM system and they never swapped decryption keys or algorithms, but simply agreed at a level above the DRM system who had access to what content. The DRM then simply enabled it.

If we take this a step further we can create a kind of "super operator" or trust authority, which decides on behalf of operators who has proper access to which content. So Vodafone might allow a customer certain rights on certain devices all registered into a single domain, but also Nokia might do the same, so that a customer might download content to a mobile phone from either one, and still have the rights to spread it around his or her devices. The Nokia content might be en-

crypted using Microsoft PlayReady and the Vodafone content might be encrypted using CoreMedia's OMA DRM, but these systems would then be told that it was "okay" to authorize issuing of decryption keys by another application or trust agent.

Any system that allows keys to swap from one DRM to another is doomed, because hackers will attack the weakest link and achieve access to all of the DRMs in one hack. So instead the trust authority runs its applications above the DRM level and let's the DRMs remain self contained.

When we first heard of this we suggested that the perfect pair of companies to run and manage such a Rights Locker, as well as the various mediations needed between different DRM types, were Verisign and Thomson, who are already partnered on this type of activity elsewhere, so perhaps we will see them lending a hand, or other organizations like them.

The Sony Pictures DRM eco-system envisages a Rights Token that identifies content, the business model and the consumer

The central data element here is called a Rights Token which is a DRM-agnostic content identifier, along with a content usage model identifier, and a consumer identifier. These Rights Tokens are a way of passing information to the participating DRM systems themselves. This Eco-System was described in a Coral paper and now looks odds on to become implemented with further software focusing on managing the consumer's personal media Ecosystem of devices, service providers and content and defining their domain of devices.

The way this shows itself to users is that they put each device online and register it when they buy it, and when they buy content the retailer registers it along with the rights sold, with the trust authority. The consumer then enjoys complete DRM freedom thereafter, as long as he or she doesn't make too many copies or sends the content to run on an unregistered device, through something like file sharing. The beauty of all this is that the scheme can work with devices and DRMs that are already deployed and content that is already out there.

Another nice thing is that a record is kept of consumer content rights, so if users loses their copy of the content, the operator might include, as one of the rights purchase, the option to download another copy – or they may not, but at least some operators can allow content persistence – so you never lose your film collection.

If this is really what Sony Pictures is pushing and if most studios in the US have joined the effort, suddenly DRM will stop being a dirty word with consumers and all online content services – after a brief

period of teething troubles no doubt – will be like Apple iTunes, portable to multiple devices, but in this case those defined by the consumer, not the content retailer.

And if Fox, Paramount, Sony, Universal and Time Warner are all on board. Along with retailers like Amazon, Target, WalMart, Comcast, MovieLink and CinemaNow (the rights tokens can refer to a DVD as much as an online copy of content) then there could be a sudden and significant change coming to the world of digital media.

Of course perhaps Open Market has nothing to do with Coral, and its technology provider Intertrust, but given that it was introduced by Mitch Singer, CTO Sony Pictures Entertainment, and Sony owns 50% of Intertrust, with Philips owning the other half, then it's odds on that this is where the idea has come from.

Key Issues

Cellular streaming TV to make a comeback with breakthrough codec

We always go on about how tough it is that half of Europe can't get its hands on decent mobile TV services, mostly due to a lack of spare spectrum for DVB-H or other broadcasting technologies, but there turns out to be more than one way to skin a cat.

A year ago a small US company called Broadcast International introduced a completely new concept in video over a constrained network like a DSL line or better still a switched cellular connection. The idea is fairly simple to describe, but tough to build, it takes 5 or 6 different approaches to digitizing video – using different encoding algorithms - and digitizes and compresses video using all of them in parallel, and picks the outcome with the lowest bit count to use for each frame produced. Previous approaches used one standard encoding approach like MPEG2 or MPEG 4/H.264.

The BI codecsys system is now ready, and could provide immediate relief for some of the streaming cellular TV efforts in Europe

The improvement is radical because they have built specialized codecs to cope with bright light or dark situations and other specialist video conditions, and BI has managed to get a High definition TV stream being delivered in about 3 Mbps, which it says will shortly move to 1.5 Mbps, and a mobile TV stream over a cellular link, which is said to be every bit as good as a DVB-H signal, but using just 50 kbps.

Existing H.264 HD efforts are closer to 8 Mbps and mobile TV between 250 and 500 kbps. The new technique could be equally applied to broadcast or streamed technologies, but with many of the major

US and European cellular operators working on video constrained streaming set ups, it could be harnessed for almost nothing, compared to building a DVB-H network for a fortune.

Doing that amount of processing is quite a tricky thing to do, so BI had to go to IBM and use a blade made up of two IBM Cell processors, the same chip that drives the PlayStation 3, in order to find anything powerful enough, and yet cheap enough, to output all those video streams in real time. The Cell Broadband Engine is a chip which has 8 MIMD processors, which can each process multiple instructions at the same time, all reporting back to one master that organizes all the work. It took several $ billion to bring this chip to market.

Now, after an extra $15 million of funding, and spending more than 20 man years of hand tuning the system onto this complex parallel architecture, BI has the encoders ready and will show the finished product at IBC next month.

Now the company tells us that it is actively shifting its emphasis to wireless and is in talks with two wireless operators

IBC is the International Broadcasting Conference in Amsterdam, which drags every technology business which addresses broadcasting and TV technology out to show their wares to more than 50,000 visitors from all over Europe.

Now the company also tells us that two wireless operators in Europe are already looking hard at using the technology to upgrade their streaming cellular TV efforts. Streaming TV on a handset uses up too much bandwidth to allow a decent picture, because if there are too many TV viewers all taking a piece of a base station's bandwidth, that would prevent cellular calls getting through. In order to get a decent picture the handset needs to support QVGA, at 320 x 240 pixels, at 24 frames per second, otherwise it just looks blocky and pixellated, and people cannot watch it for more than 2 minutes at a time, and with the BI codecs 50 kbps is all that is needed to deliver such a video density.

The company has been trying to address the IPTV and cable market, with some success, but few operators want to go to the trouble and expense of replacing all their set tops, which are geared up for MPEG2 and H.264, and instead have asked BI to build a codec that will improve performance on the equipment that is already installed, and while this is working, it isn't bringing quite so much improvement over existing systems.

BI CEO Rod Tiede told us last week, "Targeting MPEG2 and H.264

only, takes away some of our performance, we are managing to get full HD down to 15 Mbps on MPEG2 compared to 19.8 Mbps, but still get down to 3 Mbps on H.264."

The company has HD at 1.5 Mbps working in its labs, but this position means that it has to build its system for existing set tops, then some time down the line the operator can switch out set tops, use the full BI CodecSys benefit and dramatically reduce bandwidth requirements at some point in the future.

Broadcast technologies can take the strain off purely cellular mobile TV, but the cost can be $200 million for each country

Cellular broadcast mobile technologies like DVB-H take the strain off the cellular link, and provide a separate network which broadcasts at this quality. The problem with that it costs around $200 million or more to build for each European country, plus the price of any spectrum.

What the BI technology represents is a way for the Vodafones and Oranges of this world, which have strong mobile TV offerings, to drop the data requirement for decent pictures from 250 kbps or more, down to 50 kbps, which means they could support 5 times as many customers with their existing networks and on a handset that could all be done in downloadable software. Since Orange has gone on record as saying that it will have to stop signing up new mobile TV customers in France by the end of 2008 unless it uses another TV technology, this could become the godsend it is looking for, and the last nail in the coffin for the very expensive DVB-H.

BI said that it started out focussing entirely on IPTV applications and now has fresh interest in wireless networks from two companies in Europe, which it will visit while it is at the IBC show. The company will have a "proof of concept" demonstration for wireless at IBC, and we could be seeing live services in mid 2009 if that goes well.

Key Issues

Alcatel finally clambers onto the BCAST bandwagon in Singapore

Buried in the latest Mobile TV release from Alcatel-Lucent is the claim that its DVB-H installation in Singapore is the very first using the BCAST Smartcard Profile. During the past year there has been a mad rush to claim top spot in the provision of this Profile, expected to be the dominant way of securing video content on DVB-H mobile TV systems.

Until recently there had been a scrabble for power in DRM systems for mobile TV with competing standards from OMA (BCAST) and

DVB (Open Framework), as well as another system from Nokia (18Crypt). Many of the existing installations have be put together with DVB systems from existing broadcast conditional access suppliers with the bulk of business going to Nagravision and Irdeto.

Throughout the past year Open Mobile Alliance (OMA) DRM software house Coremedia with Israeli security chip partner Discretix, was one of the first to announce support for BCAST, and in June 2007 SafeNet, middleware supplier S3, and multimedia software provider Nextreaming also came to market with a system. This was followed by ESG server companies EXPway and Roundbox proving their ESG's would work with BCAST and then Nagravision with smart card company Gemalto joined the clan. Somewhere in there Thomson launched an OMA BCAST systems as well.

By claiming that the Alcatel system is first to market, it perhaps means it is one of the first commercial installations, which is in Singapore with the broadcaster MediaCorp and the cellular operators MobileOne, SingTel and StarHub. However this trial has been operating since 2007, and really it should be a live system by now, so calling it a new August 2008 trial is a little disingenuous, perhaps just the BCAST profile is new. Earlier in 2006 Nokia had a similar trial in Singapore, but this trial is from Alcatel with Samsung providing handsets. We might even say that Alcatel is virtually the last likely company into the BCAST market, given that the KPN Digitenne system that went live in the Netherlands in June used technology from Nokia, and also uses BCAST.

Alcatel may actually be very late with its BCAST story, but it will need a reference site, and Singapore is as good as any

However given that very few DVB-H systems have so far been installed, this is a perfect opportunity for both Alcatel and encryption partner NDS to get a working reference system. Gemalto also provides the smart cards for the system.

The trial is based on Alcatel-Lucent's Mobile Interactive TV solution, which will power the DVB-H (Digital Video Broadcasting-Handheld) platform for the trial.

OMA had a perfectly good DRM called simply OMA DRM 2.0, but this requires a return path for authentication, and DVB-H is a one way broadcasting system, so the technology had to be adapted and use a SIM-based protection system so that flexible subscription models such as pay-per-view, pay-per-time, and recorded content could be facilitated. Samsung has provided the new SGH-P960 for the consumer mobile DVB-H trial and NDS is providing its VideoGuard Conditional Access system.

Key Issues

Broadcom tops and tails its DTV chips with AMD division

Broadcom honed in on the digital TV market this week, spending $196 million to pick up the digital TV assets of AMD, namely a few ATI chipsets – Xilleon, its NXT receiver chips and its Theater processor, and odds and ends that do motion compensation and frame rate conversion.

The statements about the acquisition are fairly bland, talking about being able to offer a range of chips at the top and low end of digital TV. We all think we know why AMD sold the division, and many investors think of it as a walking corporate corpse, although we have seen AMD in that state before, and it has a wonderful knack of getting itself out of financial difficulties. But why would Broadcom want this motley collection of chips?

Well they all seem to pick up on rising trends in the DTV market. The Xilleon includes a System-on-a-Chip which supports full HD for any of the global broadcasting standards, so it can work in devices designed for the US Europe, Japan and Korea and potentially one day China when its home grown technology is HD ready.

The Xilleon is described as having exceptionally powerful video pipeline and copes with HD deinterlacing, 3D comb filter, dynamic contrast, noise reduction, sharpness, and color control with a full audio subsystem. It is not a trivial piece of silicon and the device has 700 million transistors and is cut in an 80nm fabrication process.

Chips acquired by Broadcom in this deal all seem to point to rising trends in the DTV market

The rest of the range is about the ATSC US broadcasting standard, also used in Korea and Mexico but pretty much nowhere else. The NXT range are ATSC receiver chips, while the Theater chips are a family of advanced QAM and VSB demodulators. Of course there will be a few million ATSC chips sold (around 30 million or more) over the next year or so in the run up to the digital switchover in the US, but also an extension of the ATSC standard, one using the 8VSB modulation scheme but adding mobile TV channels, is likely to lead to a mass US mobile TV chip in the very near future and perhaps this was one of the attractions of this old ATI unit to Broadcom.

The chip can also work with cable QAM, which includes the new CableCard initiative which separates encryption from set top capabilities, another rising tide in DTV, but one that Broadcom already had ably covered.

ATI was acquired by AMD in July 2006 for $5.4 billion, mostly in cash, with some shares. It has recently led to AMD taking an investment impairment of $1.3 billion, as the goodwill in that transaction was re-evaluated.

The main ATI business are PC and handset based graphics chips and graphics accelerators and boasts Nokia as a major customer, with its chips driving music playback, 3D gaming, mobile TV and video playback.

Another reason for Broadcom buying the DTV division of ATI is perhaps because one of its customers asked it to. One DTV manufacturer last quarter accounted for over 20% of revenues. It could have been that this or another large customer either wanted some of the ATI capabilities and the Broadcom designs on one device, or more likely it wanted its main supplier in safer financial hands. Broadcom will pay $192.8 million for the division, and will retain all of the 530 staff.

The other reason to buy the DTV division of ATI is because it has some very large customers

"The acquisition of AMD's DTV business, which will become the core of Broadcom's DTV line of business, will enable us to significantly scale and accelerate the completion of our digital TV product portfolio while also expanding our tier one customer base and positions us to achieve leadership and long-term growth in this important market segment," said Daniel Marotta, Senior Vice President & General Manager of Broadcom's Broadband Communications Group.

Meanwhile in an unrelated announcement Broadcom said that the Administrative Law Judge for the ITC has recommended that some key chips from SiRF Technology Holdings are banned from importation into the US. Broadcom is fresh from winning a patent dispute with SiRF at the hands of the ITC.

The affected products would include personal navigation devices (PND), GPS modules and receivers, personal digital assistants (PDA), and cellular telephones.

The recommended remedy of ITC Administrative Law Judge Carl Charneski follows his Initial Determination earlier this month, in which he found that SiRF infringes six GPS-related patents held by Global Locate, now a wholly owned subsidiary of Broadcom. The final decision will not come until December. The lawsuit came about because SiRF sued Global Locate, which Broadcom acquired in July 2007.

Triple and Quad Play

IPTV prices crash in Germany, new Hansenet bosses follow suit

Telecom Italia subsidiary in Germany Hansenet, which offers IPTV under the Alice brand, has bundled a €30 ($44) triple play offering, hiding even the tiny €10 price it used to charge for the 70 channel service. This puts pricing pressure on other Germany IPTV operators, namely Vodafone's Arcor which only came into the market this January, undercutting both Alice and Deutsche Telekom's hugely expensive service.

The Arcor deal came in TV bundles from 22 to 50 channels with prices of just €9.95 and €12.95, and triple play pricing starting at €39.95 for VoIP, broadband at 16 Mbps and 50 TV channels, plus VoD movies at €1.49 a movie and an initial selection of 500 movies.

In March Deutsche Telekom was forced to lower its price from the stupidly high €65 for the basic IPTV package down to €49.95 a month and as a result in May it announced that it was finally making some inroads into the German market. Installations jumped to 200,000 IPTV customers in the first quarter up from 116,000 at the end of last year, due to the price change. In France Free has had to copy its name with its IPTV services and offer them for free, bundled with the price of a broadband line, at around the same €30 pricing, in order to gain any traction against France Telecom's service.

In March Deutsche Telekom was forced to lower its IPTV pricing yet again, not it is Hansenet's turn

Telecom Italia at the beginning of August, cited problems in both Brazil and Germany, with a brand new management team being put in place in Germany. The Alice service was recently put up for sale in France and there are rumblings that the same thing may have to happen in Germany. Broadband lines have increased by 25% in the European Broadband Group at Telecom Italia, which takes in the German and Netherlands operations of which 10% is organic growth. Telecom Italia has 2.5 million customers in this group.

By comparison Telecom Italia in Italy has had more success and now has 180,000 IPTV customers there.

In a similar move this week Telefonica's has cut prices on its IPTV platform in Spain, offering the basic TV channels for just €3 extra per month which means it has a triple play for €43.90 a month. Telefonica has 576,000 subscribers to its IPTV service, but is being hounded by Orange in its own backyard which has doubled IPTV subscriptions to 92,000 during the past year in Spain.

Triple and Quad Play

Comcast FCC war may need lawyers to resolve entrenched positions

There is always one legal action that is a defining moment in almost all changes to the accepted order within digital media. There is the famous "Betamax case" where the US Supreme Court ruled that making individual copies of TV shows to watch later didn't constitute copyright abuse, but fair use. Then there was the Supreme Court clarification on its position on "encouraging" copyright abuse, which sunk the P2P industry.

The creation of the Digital Millenium Copyright Act and its global implementation via the World Copyright Treaty is another such landmark legal move.

Now the battle between the FCC and Comcast over just what it is allowed to do with internet traffic promises to be yet another huge decision, which will have global implications for Net Neutrality.

It was AT&T, back when it was just plain old SBC, that complained longest and loudest about having to allow companies like Google to offer services over its network, and wanting to charge not only the customer, but the services carried to the customer, for use of its broadband lines. Someone must be sniggering up their sleeve at AT&T now that it is in fact its worst enemy, in the form of the largest US cable operator Comcast, which is in fact testing the principle in law of what's reasonable in terms of traffic shaping for internet traffic.

It was AT&T that used to take the lead complaining about having to support companies like Google, but it is its old enemy that has tested Net Neutrality

With server based activities, it is fairly easy for an ISP to decide that a particular server destination can only have a limited amount bandwidth, but with P2P based services, where the files or streams can come from anywhere on the internet, detection and delay of a service has only become possible since the invention of super fast packet inspection chips that can peek at every packet and decide what is a BitTorrent video packet and what is not, based on what it finds inside.

Interestingly it is that same old issue about P2P that's causing all the fuss. The Supreme Court spent years thinking about, and months delivering a verdict, on just how to stop illegal file sharing. But it is the residue of the BitTorrent file share software, not where it is used, as it is today, for legal file sharing, but where it continues to be used without the blessing of its author and his company, to continue video piracy, which is causing all the problems.

Suddenly the FCC is on the side of the consumer, and not on the side of the ISP and has kicked the entire problem onto Comcast's head with its decision this week to go ahead and force the cable operator to stop blocking BitTorrent traffic.

In fact FCC Chairman Kevin Martin went further and said that Comcast's existing practices for blocking traffic were actually anticompetitive because potentially legal BitTorrent could offer services to compete with Comcast.

In the past the US government has stopped short of making a law on Net Neutrality, after several attempts, and the FCC felt sure that no new law was needed because it had the power to legislate in the area.

Comcast must stop what it is doing now, find another way to reduce its ISP traffic and then ask the FCC if it approves

But its order to Comcast is that it must stop what it is doing now, and then try something else, and explain what the something else is. So in other worlds poor Comcast has to stop blocking BitTorrent, a move that will automatically flood its BRAS' (broadband remote access servers) and its backhaul, and then put in place something that will lighten the traffic enough that it doesn't lose all of its customers.

In effect the FCC thinks it is saying, do like all the other ISPs in the US do, which is spend more money on more hardware to cope with the problems , but in actual fact even if temporarily that's what Comcast does, that's no solution for any of the ISPs, and we are probably at a point where a traffic cap will have to be placed on most ISP customers. The US has tried this, specifically at Time Warner Cable this June, when the company said it would adopt an approach that is in wide use in Europe and Canada to meter new subscribers and charge them $1 per gigabyte for usage above a monthly allowance. Its test began in Beaumont, Texas.

The trick to these services is to offer a discounted subscription to people that are prepared to accept the cap, except largely it doesn't work. If it is voluntary, the BitTorrent users stay on the more expensive tariff and have uncapped service, while the non-BitTorrent users just end up paying less. Result - same problem but with less revenue.

The Comcast stab at this will be to try its own experiment where it will slow speeds for all "heavy" online users for 10 to 20 minutes. This is also similar to practice which is common in Europe, where ISPs go so far as to cut off the connection and asking the customer to reboot the browser or other software in order to re-establish a connection. This is aimed at BitTorrent users which often run 10 or 20 hour sessions when they are out at work away from the machine,

downloading 100s of GBs of video data. When they get home they find that their session was cut short and only half the file has come down so they have to set it running again. This won't have much of a bad effect on a user sat at the PC all the time, because they can just reboot the software when asked and re-initiate the torrent.

While this may work, this is the first time that this practice will come under the scrutiny of someone like the FCC and if it is really keen to stop the major ISPs blocking video over the internet because it is anti-competitive, then it will not accept that either.

There is probably a technical solution in here somewhere, perhaps the ISPs selling multiple tiers of service and then enforcing them, with one level being video capable and supporting QoS, and costing quite a bit more, and others lumping video with everything else and not caring if video packets arrive on time or not. And of course data capped services at the lowest level.

If we are not careful we could end up with the FCC mandating a business model of "all you can eat" internet access

Otherwise the FCC will be getting dangerous close to ruling that "all you can eat schemes" must be maintained and must support P2P traffic regardless of whether or not it is piracy or a new service innovation, and that position is untenable for an ISP.

If Comcast finds a position that is acceptable to the FCC, this could easily become enshrined in the US legal system and then proliferated to the rest of the world, which currently is a lot less consumer friendly than the US regime, allowing service blocking and anti-trust at ISPs which are controlled by monopolies – even in consumer conscious Europe, which has yet to get to grips with this problem.

But the likely outcome is that the two sides will continue NOT seeing eye to eye, and that Comcast will mount a legal challenge to the FCC power, and this will struggle step by step over the next few years towards another Supreme Court stab at fixing digital media.

Mobile and Mobile TV

Nokia upgrades multimedia Nseries – OLED screen, bundled games

Nokia today came out with a startling Autumn extension to what these days it calls its Nseries multimedia computer range – dual slider handsets which are jam packed with entertainment options, ready for shipment in October.

The two additional devices, the N85 and the N79 both come with 10 N-Gage games bundled, a 5 megapixel camera with the same Carl

Zeiss optics that are built into its N95 and N96 top ranges of handsets. Additionally they have a built in FM transmitter, so that like the iPhone and iPod they can transmit stored music to play through a car stereo.

The N85 comes with a 3 month subscription to a voice navigation service, and it has a phenomenal OLED display. OLED displays use about 40% less power than the LCD equivalent, offer far more brightness and contrast from blacks to whites and are tipped to eventually become the replacement technology for LCD. Right now OLED screens are just appearing on handsets, although Sony has a 3 millimeter thick 11 inch TV screen using the same technology. The N79 has a conventional 2.4 inch LCD QVGA screen.

Both devices attach to the Nokia Ovi portal, so can access the Nokia Music Store. The N85 has an 8 GB microSD card, the N79 a 4 GB card, so that's a around 3,000 songs or four hours video storage for the N79, and double that for the N85. Both support playback of H.264 and Windows Media video, as well as Adobe Flash Video, RealVideo and 3GPP streaming.

The battery times appear to be phenomenal, whether it is talk time, video time or for listening to music

Battery times appear to be phenomenal too, with the N85 having a talk time of 270 minutes in 3G,the N79 210 minutes, and the N85 supporting a video call of up to 160 minutes. Video playback is up to 7 hours on the N85 and 5 hours on the N79 and 30 hours and 24 hours respectively for listening to music. If you simply turn the N85 sideways it highlights gaming keys and it can play DVD quality video at 30 frames a second.

Nokia says the N79 has superior web browsing so we assume there are different browsers in these two devices, though they both seem to offer Series 60 and can support all the browsers that supports. There is also an on device video editor. The N79 has a Widget pre-loaded to link to the Friendster social networking system, although you can just as easily connect to Flickr or YouTube through the browser.

Although both devices have 10 games pre-loaded, the owner can only sign up for one game as there is a single free game voucher, the others can be sampled and then need to be purchased. Nokia Maps is also loaded on the N79, but can work on either device giving access to 15 million points of interest.

The N85 will retail for €450 (£358), the N79 for around €350 (£278), though we're pretty sure that subsidies will be available shortly from major operators.

Mobile and Mobile TV

Intel's next attempt to define standards: the mobile wallet

The evolution of the mobile wallet has been a slow one, despite the promise of being able to load cash and credit onto a handset, and use it as a swipecard to make small purchases, as well as a gadget to process larger banking transactions. However, the success of mobile money in Japan is starting to revive interest, and this is yet another area where both Qualcomm and Intel are aiming to gain significant influence over the devices and infrastructure.

Last month Qualcomm outlined its plans to develop back end infrastructure and managed services for operators offering mobile payments, on the back of its purchase of Firethorn, a service enabler that has partnerships with Verizon Wireless and AT&T. Now, at its Developer Forum last week, Intel has set out its own stall, focusing on smartcards that could be integrated into phones and other devices, and on the infrastructure to support wireless wallets.

Intel's People and Practises Research group has been working for the past year on frameworks to underpin wireless wallet applications, and is vocal about the need to unify the rapidly proliferating digital money formats – characteristically for Intel, pushing its own ideas and technologies as the solution to fragmentation. The researchers pointed out that for mobile wallets to take off, faster transaction processing is required, and frameworks need to be standardized, but also to embrace non-traditional forms of money such as airmiles or PayPal credits.

Last Month Qualcomm outlined plans to develop back end infrastructure for mobile payments

The head of the team, researcher Scott Mainwaring, said the company was "working on designs to expand our imagination about what money might look and feel like in the future", in its Personal Digital Money project. As well as looking at its own technologies, the initiative will pool results from many electronic cash and smartcard projects round the world, and try to integrate them with a common set of design techniques, formats and protocols. Examples the team has studied include Japan, the boom in mobile payments and credits in the Chinese gambling sector, and the widespread use of cellphone-based money transfer in some African countries like Kenya (Vodafone has been pushing this as an alternative to established transfer networks like Western Union, which require customers to visit offices, and is even considering bringing the service to the UK to serve new immigrant groups).

The more diverse digital money becomes, the more users will like

it, according to Intel, but all electronic cash and credit types need to be handled in the same way, securely and rapidly, and from a wide range of devices.

Intel's e-cash project is slated to last at least another year, at which time the Intel unit will recommend the best electronic infrastructure for future wireless wallets, and try to push this into the relevant mobile, internet and banking standards bodies.

Mobile and Mobile TV

What do you get when you marry a PMP and an internet tablet?

French miniature video player maker Archos has a new concept, the Internet Media Tablet, in effect a portable video player that also browses the internet by attaching it to an HSDPA cellular service. It has introduced the Archos 5, Archos 5G, and the Archos 7 all with those capabilities in multiple countries available this week.

These are ultra-thin tablets running on the Arm Cortex microprocessor, with the 5 as a high resolution 5 inch device and the 7 as a 7 inch touch screen version. It comes with its own email application, which lets you check and reply to emails and share attachments and can connect with either cellular broadband or wi-fi. The systems still have high resolution playback with the HDMI output onto TV, storage capacity up to 320 GB and an onboard search engine facility to find files.

This is really Archos taking video the Kindle route, and allowing for wi-fi or cellular downloads in the background, as a way of acquiring content – which this device would be just right for. The Amazon Kindle does this will eBooks.

This is Archos almost taking the Kindle route for delivering video

The devices all have Adobe Flash 9 video support, you can natively browse video-sharing websites such as Dailymotion and YouTube. The 5 and 7 models need connection to HSDPA by buying a PC dongle, while the 5G has a native connection built in.

The touch screen device has a virtual keyboard for typing. Archos says the tablets can give you access to 1,000 Web TV channels, 10,000 Web radio stations and 100,000 podcasts in less than 3 clicks and Archos has its own Media Club with video, games and music content on either buy or rent models.

All of these devices can also be used to record live TV, store and view later and can be bought with a GPS in-car holder which turns

the Archos 5 into a fully fledged GPS. There is a TV Snap-on which will be available at the end of 2008, which turns these into digital TV sets. The Archos 5 and 7 become available in September and October and the 5g in early next year, for between $350 and $550 depending upon disk size.

Digital Home

Intel puts in a bid to unify 60GHz efforts

Intel rarely misses an opportunity to try to drive an industry standard, and it is clearly getting impatient with an impasse that threatens to stall work on personal area networks at 60GHz, where very high data rates can be achieved and where the future of high definition home networks is seen by many to lie.

The chipmaker said last week that the industry needed to focus on a single platform, not “point solutions”, and is hosting an open workshop in October that it hopes will address some of the thorniest issues. Two groups within the IEEE standards body are in a stand-off about the future of 60GHz, and threaten to develop two separate and incompatible standards, reducing chip volumes and raising costs.

Intel did its usual trick of trying to unify a fragmented community by pushing its own solution to the problem

The 802.15.3c group is developing an early draft, which would build on the existing 802.15 family of short range systems and could also embrace UltraWideBand techniques. But the 802.11 section of the IEEE also wants to use 60GHz for a gigabit Wi-Fi network. Additionally, there are various proprietary groups looking to create de facto standards for this plentiful and generally license-exempt band.

"We really believe in a single interoperable solution, but many efforts are focused on point solutions," said Lilly Yang, an Intel researcher speaking at the Intel Developer Forum last week.

Yang outlined Intel’s own design for a system that could deliver up to 4Gbps over short distances (up to 10 meters), with or without line of sight. Presumably Intel is hoping it can position this work to be the unifying force over the various 60GHz efforts, and so increase its own influence over the evolution of pervasive wireless.

"We are talking about a diverse set of requirements for a diverse set of platforms," Yang said. "We want one interoperable solution to support all these uses.” The Intel workshop will be held October 6-7 at Intel Research in Hillsboro, Oregon.

Games

UK legal firm triggers massive bout of suing P2P gamers

UK law firm Davenport Lyons has applied for the names and addresses of 7,000 IP locations in order to chase down gamers who have pirated games, and this week said that it had just got its first conviction in court. The conviction left one illegal file sharer with a bill for $32,000, most of that money going to Topware Interactive, owner of the computer game Dream Pinball 3D, and for legal costs.

David Gore, a partner at Davenport Lyons, said: “Illegal file-sharing is a very serious issue resulting in millions of pounds of losses to copyright owners. As downloading speeds and Internet penetration increase, this continues to be a worldwide problem across the media industry which increasingly relies on digital revenues.”

These early convictions are likely to see a global campaign of suing file sharers, for games now instead of music and video, and Davenport Lyons is offering a low pre-set fine to resolve the suits, if gamers will promise to stop making games available on P2P.

The award of damages follows a recent government brokered deal between the UK’s music and film industries and leading Internet service providers (ISPs) to tackle illegal file-sharing. Some six million people are thought to engage in illegal file-sharing each year, a trend which has cost the music and film industries many millions in lost revenue. Several thousand names and addresses have already been ordered by the High Court of London to be released by the ISPs concerned. The evidence supporting the disclosure applications and subsequent proceedings is obtained by forensic computer experts Logistep AG, based in Switzerland, which has developed software to search for and accurately identify the IP addresses used to upload the copyright owners’ work.

Worth Noting

Deals, launches and products

Broadband TV News has been saying for a while that **News Corp** is on the verge of selling itself out of the Central and Eastern European markets – although it has never quite said why. It has now disclosed more detail with the Bulgarian national commercial station **bTV** to be sold by the end of this year, which has already had bidders. It will also sell operations in Poland, Latvia and Serbia. These markets are rife with piracy and are fairly poor, with low Pay TV penetration, which might have something to do with it.

Sony Computer Entertainment America said this week that it will introduce a new 160GB PlayStation 3 entertainment system in the US as part of the limited-edition Uncharted: Drake's Fortune PS3 system bundle. It will be available in November and cost $500 and be bundled with the game and a dualshock wireless controller. The previously announced 80GB PS3 system at $400 has already started shipping to retailers.

Motion control application specialist **Hillcrest Labs** in the US said this week it has taken out a suit against **Nintendo** for patent infringement with the US International Trade Commission (**ITC**). It has also begun a separate patent infringement suit in the US District Court in Maryland against Nintendo related to the Wii video game system. Its patents refer to handheld three dimensional pointing devices and a navigation interface display system that graphically organizes content for display on a television. If these suits will have any merit, Nintendo would be in a tight spot. Wonder why it didn't come out before?

US researcher **In-Stat** says that there will be 200 million home networks installed globally by the end of 2008. This has been driven by rising broadband subscribers, the desire to share bandwidth, residential gateways being supplied by Telcos and rapid increases in Asia/Pacific. But compared to previous years, the growth of the total market for broadband CPE is slowing, but is expected to remain positive through at least 2012. It says it is worried though for 80211n Wi-Fi, because people mostly don't see why it's different from 80211g. Unit shipments of home network CPEs grew 15% in 2007 to 149 million In-Stat said.

China Telecom's $4 billion CDMA network upgrade has been won by **Huawei**, **ZTE** and **Alcatel-Lucent**, who will get roughly 40%, 40% and 20%, respectively. ZTE will also supply SMS technology and will share the supply of WAP gateways with Alcatel. Huawei will manage the national MMS exchange gateway and KJava download platform.

China Telecom has also told outlying regions they must buy IPTV systems from **ZTE**, **UTStarcom** or **Alcatel-Lucent** and has a longer list of set top providers. The move was reported in local China watcher web sites, and will accelerate the drive to wire up China, already past 1 million IPTV subscribers and last month the company ordered a further 500,000 IPTV set tops.

We love the idea of **Bandstocks**, reported in the UK daily newspaper the Guardian this week. You pay any number of £10 ($20) chunks of money to buy shares in a band, they get to cut a CD once they have collected enough money, and the investors each get a free CD once they have recorded it. Investors also get a share of profits from sales and licensing, and a credit on the album cover. If this takes off, goodbye record labels.

US film watching newspaper Billboard says that four Japanese record labels have been single out by the **Japanese Fair Trade Commission** as having illegally monopolized the local ring tone market. **Sony Music**, **Avex Network**, **Victor Entertainment** and **Universal Music Japan** have all filed lawsuits seeking to nullify the ruling. They are said to have supplied content exclusively to a single content aggregator **Label Mobile**, which they jointly owned.

Macrovisioin's Gemstar TV Guide has extended its licensing deal with **Sony** and its Interac-

tive Program Guide will now be integrated with PlayTV, a combined TV tuner and DVR based on the Playstation 3, due out later this year. PlayTV will launch in September.

For a paltry $38 million **Virgin Mobile** USA has completed the already announced acquisition of US MVNO **Helio**. Shareholders **SK Telecom** and **Earthlink** opted to take shares in Virgin Mobile and both SK Telecom and Virgin Group will each invest $25 million. The deal was previously contingent upon Helio successfully cutting its costs, which it has now done.

US satellite TV operator **Dish Networks** says that it now has the best picture on any US pay TV service, given that all of it, both HD and SD is now delivered in H.264. It also says it is offering movies in 1080p, and will have 150 national HD channels by the end of the year.

Microsoft has made a strategic investment in **Move Networks**, a specialist provider of Internet TV services. Microsoft joined in Move's third round of investment following a previous deal for Move to work with Microsoft Silverlight, the cross-browser, multiplatform plug-in for delivering video, among other things. Move will also begin using Microsoft codecs after the deal and its DRM. No details on the size of the investment were given.

France Telecom has been trying to launch an IPTV service in the UK for some years, previously attempting it through its **Wannadoo** ISP, which is now merged under the **Orange** brand, but still no IPTV service. Now **IPTV Watch** says that the announcement is imminent, but most IPTV services which do not have the support of the incumbent Telco have been failing across Europe, and have been put up for sale. Selling pay TV in the UK is tough, given that there are already multiple suppliers and that Free to Air TV efforts are growing at a tremendous rate.

Inmarsat has said that it wishes to launch an S-Band satellite in Europe, as part of its bid for a European wide S-Band license. The satellite that it has in mind would not be in place before 2011, while **SES Astra** and **Eutelsat** are both planning a joint S-Band satellite by 2009 which would offer DVB-SH Mobile TV among other services. Inmarsat would use a **Thales** Spacebus for mobile broadcast and two-way telecommunications services. In the US S-Band in 2.1 GHz is being used to offer Mobile Satellite Services.

India's **Reliance** which has been testing IPTV simply forever, says it will launch service within 2008. In 2007 Reliance said that it would work with **Microsoft** on IPTV, and announce a total spend of $500 million, which we said was both ridiculous and misleading, since broadband service and pay TV service pricing there would never see that paid back.

US Researcher **In-Stat** says that cable telephony subscribers are continuing to grow, which is no surprise, and that there are almost 8 million new subscribers added globally over the past 12 months. Growth in the US is strongest, as cable operators there have begun offering full VoIP network architectures. Cable telephony service revenues will reach $12.6 billion in 2008, up from $10.7 billion in 2007 says In-Stat and subscribers will reach 37 million by the end of 2008, and rise to over 64 million by 2012. Assuming incumbent Telcos don't do something radical to stop it.

Faultline is published by Rethink Technology Research Ltd, 1 Wide Lane Close Brockenhurst, SO42 7TU
Tel: +44 (0)1590 624530 Fax: +44 (0)207 900 2225

Faultline Principal Analyst: Peter White peter@rethinkresearch.biz
Research director: Caroline Gabriel caroline@rethinkresearch.biz

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Sales contact details
Peter White,
+44 (0)1590 624530
Mobile: +44 (0)7734 037414
Email: peter@rethinkresearch.biz

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