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New UPnP standard for inter-network connection

29/01/2010 15:35

UPnP Forum standard page - RemoteAccess:1[1]

The UPnP Forum have this week released a Device Class Profile for setting up networks for inter-network operation and remote access. This is mainly to permit:

- a) UPnP devices to work across multiple logical networks and
- b) UPnP methods to be used for inter-network configuration

What is involved

The standard encompasses public-network-discovery mechanisms like STUN for determining the type of upstream NAT device in the Internet network and dynamic DNS for establishing the IP address for the main network's fully-qualified Internet name. Some of these standards are implemented through VoIP setups to permit discovery of the VoIP network.

It also involves the establishment of secure VPN or DirectAccess (IPv6 over IPv4) tunnels between networks for this purpose. This doesn't depend on a particular tunnelling method like PPTP, IPsec or SSL, but is more about establishing the tunnels between the networks.

There is also the establishment of UPnP "device relays" at each end of the tunnel so that UPnP entities (devices or services) in one network can be seen by similar entities in another network.

The standard also includes methods to permit replicated setup and teardown of devices and services between both networks. This would happen when the link is established or torn down or as UPnP devices come on line and go off line while the link is alive.

Abilities

The-access or client network can be a simple single-subnet private network such as a home network, small-business network or public-access network. Larger corporate networks can qualify if the firewall at the network's edge doesn't specifically exclude UPnP Remote Access.

The master network which the remote device is visiting must be a simple single-subnet private network such as a home network or small-business network. The remote access server can be part of the network-Internet "edge" device like the typical "VPN endpoint" router sold to small businesses or can be a separate piece of hardware or software existing on that same network. In the latter case, the server would have to work properly with a UPnP-compliant router (which most routers sold through the retail channel are) and obtain the network's outside IP address and set up port-forward rules through that same device.

The value of UPnP Remote Access with corporate networks needs to be assessed, both in the context of network security for high-value data as well as interaction with established VPN setups. This can also include issues like the "other" network gaining access to UPnP devices on the local network or particular devices or device classes being visible across the tunnel.

What needs to happen

This standard needs to permit the user to establish or simple yet secure credential-delivery method for VPNs that extend the small networks. This may involve implementing methods similar to either use of a PIN when pairing Bluetooth devices, "push-push" WPS -style configuration or, for "deploy then establish" setups, an email-based system similar to what is being used to confirm user intent when people sign up for Internet forums and social networks; or other similar practices.

The latter situation would appeal to setups where, at one end of the link, there isn't likely to be a regular client computer in place, such as CCTV and telemetry applications or remote servers.

Compliant systems may also need to support two or more different methods to cater for whether the logical networks are in the same building or afar; or for whether the user prefers to deploy the equipment then configure it remotely or configure all the equipment at one location before deploying it.

Why would this technology end up being useful

One main reason for this development would be to extend the UPnP technologies to VoIP setups. This would then allow for home and small business to benefit from corporate-class telephony setups like tie-lines, common phone books, logical extensions and the like as well as easy-to-implement VoIP telephony.

Another application would be to enable access to existing UPnP devices in other locations. The common reason would be to benefit from multimedia content held at home from a hotel room or to synchronise such content between NAS boxes installed at home and a vacation property. Other applications that come to mind would include remote management of UPnP devices that are part of building control, safety and security such as central heating or alarm systems.

Parts of this standard may be implemented by router and remote-access software vendors as a way of establishing a "box-box" or "box-PC" VPN setup between two small networks like a home network and a small-office network. This could allow the small-business operator to benefit from the VPN setup that big businesses often benefit from, thus allowing for increased yet secure network flexibility.

Links

[1] <http://www.upnp.org/specs/ra/ra1.asp>

The Apple iPad Tablet computer is now real

28/01/2010 07:20

Apple unveils the iPad | The Age (Australia)[1]

Apple's iPad: It's Real, and It's \$499 | Internetnews.com[2]

iPad d'Apple : magique et révolutionnaire ? | DegroupNews (France - French Language)[3]

From the horse's mouth

Apple's iPad Website[4]

My comments about the Apple iPad and Apple's current direction

Over the past few months, there was a lot of talk about Apple releasing a "slate" computer. This was both in the computer press and amongst computer enthusiasts, including Apple Macintosh users. Most of the suspicions included tight hardware and software integration, including where you can purchase the software from as well as the form factor. Apple was positioning the iPad as an intermediary computing device between their iPhone/iPod Touch platform and the Macintosh computers, especially the MacBook Pro laptops. One Apple enthusiast that I know of was considering deploying it as a "simple computing device" for his mother to use when writing e-mails and doing similar activities,

Now that the Apple iPad is on the scene, I have noticed that most of these suspicions are real. For example, the computer is a larger version of the iPhone or iPod Touch and operates in the same manner as these devices. Like most Apple products, it will only work with a limited Apple-approved ecosystem of accessories like an "iPad desk stand" and an "iPad keyboard stand". As well, the user won't be able to replace anything in the computer, which will lead to the computer having to go to an Apple-approved repairer if the battery habitually fails to keep its charge for example.

As for software, you will need to go to the Apple iTunes empire to buy apps, music, video or "iBooks" which are Apple's e-books. I was skimming through the CNET liveblog[5] and they reckoned that there were many credit cards associated with the iTunes empire due to the many iPods and iPhones out in circulation. Apple had even ported their "iWork" productivity suite to this platform and made the individual pieces - the Keynote presentation program, the Pages word-processing program and the Numbers spreadsheet program - available as individual apps or as a package through the App Store. The plethora of existing iPhone apps - an app for every part of your life - can work "out of the box" with this device, but Apple had revised the SDK to allow App Store developers to design the app to work in a "best-case" manner with either the iPad or the iPhone. This may happen more so if the developer revises the app as part of upgrading it.

These facts about the hardware and software availability have had a few Apple enthusiasts that I know of worried that Apple was becoming a "dark emper" - a monopolistic monolith of a company - in a similar manner to what Microsoft was accused

of becoming with the Windows platform. Some of these enthusiasts were even considering moving to other platforms like Windows or Linux. No matter what, there will still be the Apple enthusiasts who will prefer that their iT solution in their life has that Apple logo on it.

I also reckon that government bodies like the European Commission and the US Department Of Justice weren't seeing the recent iTunes-iPod-iPhone-driven anticompetitive behaviour that Apple was showing in an "anti-trust" light, yet they see Microsoft as being anticompetitive with its integration of Internet Explorer and Windows Media Player in to the Windows platform.

The iPad works on an A4 processor which is optimised for this kind of computing and uses the same touch-screen and accelerometer-driven input as the iPhone. It uses a larger QWERTY software keypad for text entry but you will have to use the aforementioned keyboard stand which has a "chiclet" keyboard if you want to use a hardware keyboard/

There will be two levels of connectivity available for the computer - one with 802.11n WiFi and Bluetooth and one with 802.11n WiFi, Bluetooth and 3G wireless broadband. The latter version will most likely be available through the iPhone dealers, most likely as a subsidised device that is part of a 3G wireless-broadband contract. In the US, this would be with AT&T as they are Apple's US partner. Each level of connectivity will have the standard memory levels that are available with the iPod Touch - 16Gb, 32Gb and 64Gb.

This unit will integrate in to a home network in a similar manner to how the iPhone and iPod Touch integrated in to such networks. This means that it will work with any 802.11g or 802.11n segment, but may not offer native support for UPnP Internet Gateway Device management. The iTunes software will be optimised to work with other Apple devices, but you can use iPhone apps like PlugPlayer to integrate this unit with a DLNA-based home media network.

Whatever way, I reckon that the iPad may build up a class of "internet tablet" devices from the main platforms and make basic computing and Internet-access tasks easier for most people.

Links

[1]

<http://www.theage.com.au/digital-life/computers/apple-unveils-the-ipad-20100128-mz84.html>

[2]

<http://www.internetnews.com/mobility/article.php/3861136/Apple-s+iPad+Its+Real+and+Its+499.htm>

[3]

<http://www.degroupnews.com/actualite/n4438-apple-ipad-mat%C3%A9rie-l-ebook-netbook.html?xtor=RSS-1>

[4] <http://www.apple.com/ipad/>

[5]

http://news.cnet.com/8301-31021_3-10440943-260.html?tag=nl_e498

A laptop that will directly please the Beo-enthusiasts

25/01/2010 14:02

ASUS NX90: Bang & Olufsen ICEpower Laptop [CES 2010] | Laptop at Hardware Sphere[1]

Dual-touchpad laptop from Asus and Bang & Olufsen - CNET Crave[2]

My comments



[3] There are those of you who may own or have used Bang & Olufsen hi-fi systems or TVs and have become amazed at the beauty of these Danish design masterpieces. Then when you switch on any of these masterpieces, your experience with them is so special, with such benefits as high-quality sound and pictures and a distinct “feel” and user experience.

You may be wondering when this kind of experience will appear on your computer and may have thought of using the Apple Macintosh as a way of coming closer to this experience.

Now Asus have brought this experience closer to the Windows PC user through the release of a laptop computer that has been designed in conjunction with this company. David Lewis, who is a freelance industrial designer who has designed most of the classic B&O masterpieces such as the Beosound 9000 music system and the Beovision LX and MX series of television sets, has been responsible for the key aspects of this design. Similarly, the pictures of this computer when it was open reminded me of the Master Control Panel that was part of the Beosystem 6500 music system, especially with the black keyboard area and the polished-aluminium palm rest. The screen bezel had the speakers integrated in it and was wider than the keyboard area. This made it have the look of one of B&O’s newer flatscreen TVs.

None of this design is complete without there being improvements in the sound-reproduction department. Here, they also used the B&O’s ICEPower Class-D switch-mode power amplification technology, which is known to be one of the few amplifier designs of this type that yield high-quality sound. The main reason that the speakers are in the screen bezel, rather than facing upwards from the keyboard area, are to focus the sound at the user. This is the common setup practice for sound playing to the audience and is used for hi-fi, TV sound, desktop PCs and other common speaker-based sound reproduction tasks.

With Asus becoming involved with one of the few “audio

companies of respect” to design a high-end laptop computer, this certainly shows that there is effort being taken in improving the sound quality of these computers. If this happens further, the quality of the sound that emanates from this class of computer could be improved rather than us having to stick with the usual weak tinny sound or connect these computers to external speakers for better sound reproduction.

These computers also used a “dual-touchpad” design which is often described as being similar to how a master DJ cues up records on his two turntables. This then allows for increased control of the computer, especially when scrolling through material.

Of course, the specifications and software provision are not dissimilar to a high-end multimedia laptop running Windows 7.

This also means that people who work with the Windows operating system can still benefit from classy and elegant computer designs. Once we see computers like this appearing on the market, there will be the desire to offer something that bit extra when it comes to the business-personal laptop computer.

Links

[1]

<http://www.hardwareisphere.com/2010/01/06/asus-nx90-bang-olufsen-icepower-laptop-ces-2010/>

[2]

http://asia.cnet.com/crave/2010/01/06/dual-touchpad-laptop-from-asus-and-bang-olufsen/?scid=rss_c_crv_nb

[3]

http://homenetworking01.info/wp-content/uploads/2010/01/BeosoundOuverture.jpg#utm_source=feed&utm_medium=feed&utm_campaign=feed

Internet radio in the car – why not?

25/01/2010 11:07

A few weeks ago, a young teenager friend of mine had the Kogan internet radio, which I previously reviewed a sample of and had bought, “tuned” to an Iranian pop-music station that was broadcasting via the Internet. This youth, who had just turned 18 and was about to get his driver’s licence, was asking whether Internet radio in the car would be a reality.

Issues that limit this concept

One of the main issues would be for the wireless-broadband standards like 3G and WiMAX to support media-streaming in a reliable manner and at a cost-effective rate. Recently, there were issues with AT&T raising concerns about Apple iPhone users drawing down too much data, especially multimedia and another 3G provider wrote in to their subscriber terms and conditions a prohibition against media streaming.

The main issues were how these networks handle real-time content and whether they can stream this content reliably when the vehicle is travelling at highway speeds or faster. This also includes how to achieve this cost-effectively without limiting users’ ability to enjoy their service.

One way that it could be mitigated would be for mobile carriers and ISPs to look towards providing “sweeter” wireless-broadband deals, such as integrating voice and data in to single plans. Similarly, the providers could optimise their services to cater for this kind of use.

Ways of bringing Internet radio to the speakers

Internet radio functionality integrated in car audio equipment

In this setup, the car-audio equipment, whether as part of the in-dash “head unit” or as an accessory tuner box, has access to a TCP/IP LAN and Internet through a modem or an outboard router. It uses any of the common Internet-radio directories like vTuner or Reciva to allow the user to select any of the audio streams that they want to listen to.

Wireless broadband modem integrated in or connected to car audio equipment

The car-audio equipment would have a wireless-broadband modem integrated in the unit or connected to it. The latter situation could be in the form of a USB “dongle” plugged in to the unit, or a mobile phone that supports wireless broadband being “tethered” by USB or Bluetooth to the unit. If the setup involves an integrated modem or an attached USB “dongle”, the setup may use authentication, authorisation and accounting data from a SIM installed in the unit or “dongle”; or simply use the data from a phone that uses Bluetooth SIM Access Profile.

This practice had been implemented in a Blaupunkt car stereo which was being used as a “proof-of-concept” for Internet radio in the car.

Use of an external wireless-broadband router

This method involves the use of a mobile wireless-broadband router which has an Ethernet connection and /or USB upstream connection with a standard “network-adaptor” device class along with a WiFi connection. Of course, the device would have a wireless-broadband connection on the WAN side, either integrated in to it or in the form of a user-supplied USB modem dongle or USB-tethered mobile phone. A typical example of this device would be the “Autonet” WiFi Internet-access systems being pitched for high-end Chrysler vehicles or the “MyFord” integrated automotive network that gains Internet access with a user-supplied USB wireless-broadband dongle.

Here, the car-audio equipment would have a network connection of some sort, usually an Ethernet connection or a USB connection that supports a common “network interface” device class and would be able to “pick up” Internet radio as mentioned before.

Internet radio functionality integrated in an Internet-access terminal

At the moment, this will become the way to bring Internet radio to most car setups in circulations for some time. The setup would typically represent a mobile phone or laptop computer with an integrated or connected wireless-broadband modem. This would have software or Internet access to the Internet-radio directories and stream the audio through Bluetooth A2DP, an FM transmitter or hardwired through a line-level audio connection, a cassette adaptor or an FM modulator.

Increasingly, there is interest from car-audio firms and Internet-media software firms to establish an application-programming interface between a computer or smartphone running selected Internet-radio directory software and the car sound system. This would typically require use of Bluetooth or USB and use a control method of navigating the directory, in a similar manner to how most current-issue car-audio equipment can control an attached Apple iPod.

The primary platform where this activity may take place would be the Apple iPhone, because of it being the most popular programmable smartphone platform amongst the young men whom the car-sound market targets. The setup was demonstrated at the Consumer Electronics Show 2010 in the form of Pioneer and Alpine premium head units controlling a front-end app for the Pandora “custom Internet radio” service installed in an iPhone connected to the head unit via the special connection cable that comes with that unit.

On the other hand, if a smartphone or MID that is linked to the head unit via Bluetooth A2DP does support the AVRCP profile properly, an Internet-radio application installed on that smartphone could achieve the same goal. This would require that the directory applications are able to expose links to the AVRCP commands and requests. There will also have to be requirements to allow “source selection” between multimedia applications through the AVRCP protocol.

Further comments

This concept will become part of the “connected vehicle” idea which provides real-time access to navigation, telematics, communication and entertainment in a moving vehicle or craft, especially as companies involved in this segment intend to differentiate their offerings. It may also be very desirable as an alternative to regular radio in those areas where most regular radio broadcasts leave a lot to be desired.

Once the cost and quality of wireless broadband Internet is brought down to a level that is par with reasonably-priced wired broadband service, then the concept of Internet radio in the car will become reality.

Initiatives in France to provide access to broadband Internet to the poor

19/01/2010 06:41

Article

L'ADSL social, bientôt une réalité ? - DegroupNews.com (France - French language)[1]

My comments and summary on this topic

The French government have taken a few positive steps in subsidising broadband Internet access to poorer communities by encouraging the provision of "tarifs sociaux" or "social tariffs".

Through France Télécom, they are running a broadband plan of €6.00 per month for 43,000 of the most disadvantaged households rather than the traditional basic plan of €16.00 per month. The government are also looking at subsidising ADSL-based "triple-play" plans to the tune of €5-10 per month for poorer households based on a "social allocation" system. On the other hand, they will work with the industry to establish an industry-established "social fund" which can help with access-enablement programs.

They are describing it as a plan to end the social digital divide. But, in my opinion, there is still the issue of providing equipment of a reasonable standard to enable these programs. If the plan includes the price of any customer-premises equipment, the plan should include a router capable of 4 Ethernet ports and 802.11g WiFi access. Other issues that may need to be worked on include whether the person has to supply their own computer or whether they could have access to modest equipment such as a netbook, nettop or low-end desktop or notebook for a low monthly fee. On the other hand, these people may end up with secondhand computer equipment that is supplied "as-is".

As well, there would need to be some form of community assistance for people who are computer-illiterate. This includes help with the common computer skills such as sending and receiving emails, Web browsing, word processing and file management.

At least France has outlined some steps towards providing affordable Internet access to the poorer communities within the cities.

Links

[1]

http://www.degroupnews.com/actualite/n4404-arcep-adsl-haut_debit-voip-telephonie.html?xtor=RSS-1

A "CD-less" way of setting up printers

14/01/2010 14:45

The current situation

Typically, a printer or "all-in-one" comes with a CD that has a monolithic driver and application set for the device. The files on this disc are also available at the manufacturer's Website in their latest form and /or ported to different operating systems.

The current problem with this method of printer installation is that it is assumed that every computer has a working optical drive built in to it. The situation here is different in reality because a computer like a netbook or nettop may not have an integrated optical drive and there is a common situation where optical drives are likely to fail. This is more so with the slimline "carriage-load" optical drives that are part and parcel of most laptops that are in the field and are becoming part of the equation with small-footprint desktop computers.

The market might prefer the use of a USB memory key that has all this software, especially due to netbooks and "thin-and-light" notebooks that don't have optical drives becoming commonly available. But this memory key, like the CD, may end up being lost through the life of the printer simply due to common misplacement. There is even the factor that the files may be wiped by accident as a person intends to "stuff" a memory key with more data to take with them.

What can be done

Use of fixed onboard storage

I would prefer the printer, especially any device that offers network or fax functionality, to use fixed onboard storage. A lot of the "all-in-ones" support local removable storage in order to permit "there-and-then" printing of digital images held on a camera's memory card or to support "scan-to-memory" functionality, but the fixed storage could take things further. The USB host port on a lot of these printers may be able to be used beyond connecting PictBridge-enabled cameras. In most cases, this port may be available for one to plug in a USB memory key to print documents or images held on that memory key.

The fixed onboard storage can extend printer functionality and increase operation efficiency in many different ways. For example, it could come in handy for queuing documents that are to be printed thus taking the load off the host computers; or providing for enhanced fax functionality like "after-hours" fax transmission (to take advantage of off-peak call costs) or "hold-without-print" fax reception for whenever the machine is out of paper /ink or as a security measure. With the scanner, this could come in handy for "scan-to-email" or "pick-up-from-machine" scanning where you scan the hard copy to on-machine storage and use your computer to visit the on-machine storage when collecting the scanned images. In the case of "there-and-then" photo printing, the fixed storage can come in handy with holding the images that are to be printed so that the user can remove their camera card or PictBridge-connected camera and continue taking more pictures.

Relevance to printer setup

As far as the printer-setup routine goes, a part of this storage could be used for holding driver files for most platforms.

Local USB connection

If the printer is connected directly to the computer via a USB cable, the fixed storage could be presented as a Mass-Storage Device. Here, the storage would appear as another volume of the file system and the operating system would point to that volume whenever it has to load the drivers as part of its “plug-and-play” peripheral installation whenever a printer is connected to a computer running Windows or MacOS X. Linux users could find the necessary binaries and source files when they mount the internal storage to the “*NIX” file-system tree.

This practice is totally similar to how the drivers and supplementary software are stored on one of those USB wireless-broadband modems. Then, if the computer’s operating system doesn’t have native support for wireless broadband, the user loads this software directly from the broadband modem.

Network connection

If the printer is connected to an IP-based network like a home or office network, the fixed storage, especially the driver-files area, would be presented as a CIFS, FTP or HTTP network volume readable to all users and device-initialisation methods like “Point and Print”, UPnP, DPWS and Apple Bonjour to locate the drivers on this storage and load them in to the computers.

Keeping the drivers up to date

The user could keep the drivers up to date by running a “driver-update” program that exists on the printer’s fixed storage if the printer is connected directly to the computer. This program could poll the manufacturer’s Website for newer drivers for particular operating systems and upload the newer drivers to the printer.

On the other hand, the user could set a network-connected printer to poll the manufacturer’s Website at regular intervals for driver updates for the nominated platforms.

Benefit for installers and users

This setup method can reduce the amount of work required to commission a new printer or enable printer access to a computer that has just come on to their site. There is less need to remember where driver CDs or USB memory keys are or the Web download details for the drivers, whether for existing operating systems or for newer platforms.

It can also cut down on the number of helpdesk calls or service visits that are needed whenever someone is setting up a printer for the first time, because they have trouble with balky optical drives (common with a lot of laptops), scratched discs or missing printer-software media.

A wireless hotspot or other facility that provides public Internet access can also benefit from offering a document-printout service to their customers without having to help the customers with adding printer drivers to their computer or make a CD or USB memory key full of driver files available to their customers.

Cost and design impact for manufacturers

The fixed storage could simply be based on a hard disk or flash memory with a very low storage capacity, say up to 160Gb and which is of a small form factor like a microdrive. This can avoid the manufacturer having to vary the printer’s industrial design to suit integrating local storage and the cost to provide the storage becomes very minimal.

This feature offers another point for manufacturers to differentiate the products in their range. An economy model could just have a small amount of memory with just enough room for the drivers and perhaps queuing memory for an average document whereas midrange and high-end units could have increased memory space for all of the functionality that comes with these models.

As I mentioned before, the same feature can provide added value to the printer or “all-in-one” device such as the device taking the load off the host computers or offering a raft of extra functionality. Manufacturers can also save money on preparing and packing optical discs or USB memory keys with their printers and avoid needing to handle support issues concerning these items.

Summary

Once we work towards a method of setting up printers without any need for extra media to come with the printers, we can then see a true “plug-and-play” printing experience for all printer users.

Consumer Electronics Show 2010

13/01/2010 05:50

I have written some other posts about the Consumer Electronics Show 2010, mainly about the rise of Android and about Skype being integrated in to regular TV sets. But this is the main post about what has been going on at this show.

TV technologies

The main technologies that were present at this year’s Consumer Electronics Show were those technologies related to the TV set.

US consumers are in a TV upgrade cycle due to the country undergoing a digital TV switchover and are preferring flatscreen sets over CRT sets. This is even though there are digital-TV set-top boxes being made available at very cheap prices and through government subsidy programs. The main reality is that the older sets will be “pushed down” to applications like the spare bedroom with the newer sets being used in the primary viewing areas.

Screen Technologies

The main technology that is capturing the CES show floor is 3D TV. This has been brought on by the success of "Avatar" and requires a 3D-capable TV and, for Blu-Ray discs, a 3D-capable Blu-Ray player. In the case of broadcast content, some HD-capable set-top boxes and PVRs that are in the field can be upgraded to 3D functionality through an "in-the-field" firmware update.

In most cases, viewers will need to wear special glasses to view the images with full effect and most implementations will be based on the "RealD" platform. Some eyewear manufacturers are even jumping in on the act to provide "ready-to-wear" and prescription glasses for this purpose.

Vizio had also introduced a 21:9 widescreen TV even though activity on this aspect ratio had become very dormant.

Blu-Ray

The US market has cracked key price marks for standalone lounge-room players and there is an increase in the supply of second-tier models, especially integrated "home-theatre-in-box" systems and low-cost players.

US ATSC Mobile DTV standard

You may not be able to get away from the "boob tube" at all in America with portable-TV products based on the new ATSC Mobile digital TV standard which has been released to the market this year.

LG are launching a mobile phone and a portable DVD player with mobile DTV reception capability. They are also releasing a mobile ATSC DTV tuner chip that is optimised for use in in-car tuners, laptops and similar designs. Vizio are also releasing a range of handheld LED-backlit LCD TVs for this standard.

A key issue that may need to be worked out with this standard is whether an ATSC Mobile DTV device can pick up regular over-the-air ATSC content. This is more so if companies use this technology as the TV-reception technology for small-screen transportable TVs typically sold at the low-end of the TV-receiver market. It is also of concern with computer implementations where a computer may be used as a "one-stop entertainment shop" with TV-reception abilities.

There is a small Mobile-DTV - WiFi network tuner, known as the Tivit, that was shown at the CES. It is a battery-operated device that is the size of an iPhone and uses the WiFi technology to pass mobile TV content to a laptop, PDA or smartphone that is running the appropriate client software. It has a continuous "battery-only" run-time of 3 hours but can be charged from a supplied AC adaptor or USB port. I consider this product as being a highly-disruptive device that could be deployed in, for example, a classroom to "pass around" TV content, but it also has its purpose as something to show the ballgame on a laptop during the tailgate picnic. The main question I have about this is whether it can be a DLNA broadcast server so that people can use them with any software or hardware DLNA-based media playback client.

Network-enabled TV viewing

This now leads me to report on what is happening with integrating the TV with the home network.

More of the "over-the-top" IPTV and video-on-demand solutions (Netflix, CinemaNow, Hulu, etc) are becoming part of most network-enabled home video equipment. In the US, this may make the concept of "pulling out the cable-TV cable" (detaching from multichannel pay-TV services) real without the users forfeiting the good content. They could easily run with off-the-air network TV or basic cable TV and download good movies and television serials through services like Netflix or Hulu.

The main enabler of this would be the "Smart TVs" which connect to the home network and the Internet, thus providing on-screen data widgets, YouTube integration, DLNA content access, as well as the "over-the-top" services. Even so, the TV doesn't necessarily have to have this functionality in it due to peripheral devices like home-theatre receivers (Sherwood RD-7505N) and multimedia hard disks (Iomega ScreenPlay Director HD) having these functions. Of course, games consoles wouldn't be considered complete nowadays unless they have the functionality.

RF-based two-way remote control

Some home-AV manufacturers are moving away from the regular one-way infrared remote control, mainly in order to achieve increased capability and increased reliability. These setups are typically in the form of a hardware remote control or software remote control application that runs on a smartphone and they use Bluetooth as a way of communicating with the device.

These setups will typically require the customer to "pair" the remote control or the smartphone as part of device setup, which will be an experience similar to pairing a Bluetooth headset with a mobile phone. They have infra-red as a user-enabled fallback method for use with universal remote controls, but this could at least foil the likes of disruptive devices like "TV Turn-Off".

The main driver behind this form of two-way remote control is to provide a secondary screen for interactive video such as BD-Live Blu-Ray discs. In fact, Michael Jackson's "This Is It" Blu-Ray disc implements this technology in the form of an iPhone app which links with certain Blu-Ray players to use the iPhone's user interface as a jukebox for the title.

Smartphones and MIDs

Previously, I had done a blog article on the rise of the Android platform[1] as a challenger to the Apple iPhone market share as far as smartphones are concerned. There is even talk of Android working beyond the smartphone and the MID towards other device types like set-top boxes and the like, with some prototype devices being run on this operating system.

There is an up-and-coming MID in the form of the Adam Internet Tablet MID. This Android-based unit which can link to WiFi networks and has a 32Gb SSD, also has a new display-type combination in the form of an anti-glare LCD /e-ink display

This year, the "smartbook" is gaining prominence as a new general-purpose computing form factor. It is a computer that looks like a netbook but is smaller than one of them. It is

powered by an ARM-processor and could run integrated 3G or cellular calls; and its functionality is more equivalent to that of a smartphone.

There have been some E-book readers shown but these are mostly tied to a particular publisher or retail chain.

Connected Car Media

Pioneer and Alpine have equipped their top-of-the-line multimedia head units with "connected radio" functionality. This function works with a USB-tethered iPhone running the Pandora Internet Radio app. Both these solutions act as a "controller" for the Pandora app, with the iPhone pulling in the online content through that service. The Pioneer solution also offers a "virtual-DJ" function in the form of an extended-functionality app that works alongside iTunes. All these solutions are intended to appeal to the young fashion-conscious male who sees the iPhone as a status symbol and likes to have his car "thumping" with the latest tunes. These solutions don't seem to go anywhere beyond that market, whether with other mobile-phone platforms or other online-media applications like Internet-radio streams.

Ford have developed the MyFord sophisticated dashboard and online telematics system and were demonstrating it at this show. This will work with a user-supplied 3G modem and also supports WiFi router functionality. Typically, this will be rolled out to the top-end of Ford's US market, such as the Lincoln and Mercury vehicles.

Digital Photography

The new cameras of this year have seen improved user-interfaces, including the use of touchscreen technology and some manufacturers are toying with the use of fuel-cell technology as a power-supply method.

As far as network integration goes, Canon have enabled their EOS 7D digital SLR with this functionality once equipped with the optional Canon WiFi adaptor. This solution even provides for DLNA media-playback functionality.

The aftermarket Eye-Fi WiFi SD memory card was shown as a version, known as the Pro Series, that can associate with 802.11n networks.

The unanswered question with network-enabled digital photography hardware is how and whether these solutions will suit the needs of many professional photographers. The main questions include whether the units will associate with many different wireless networks that the photographer visits without them having to re-enter the network's security parameters. Another question is whether these solutions can work with higher-security WPA2-Enterprise networks, which is of importance with photographers working in most business, government and education setups.

Computer equipment

"New Computing Experience" alive and well in the US market. Market interested in powerful lightweight laptops that are slightly larger than netbooks. These will be driven by processors that are energy-efficient but are powerful. They could become an all-round portable computer that could appeal to college students and the like or simply as a desktop replacement. The machines that I think of most with this market are the Apple Macbook Pro computers that are in circulation, the HP Envy series or the smaller VAIO computers.

Nearly all of these computers that are being launched at the show are running Windows 7, which shows that the operating system will gain more traction through the next system-upgrade cycle.

USB 3.0

There has been some more activity on the USB 3.0 SuperSpeed front.

Western Digital had released an external hard disk that works on this standard, which is known as the MyBook 3.0. This may typically be slow as far as peripherals go because of not much integration in to the computer scene. VIA have also shown a USB 3.0 4-port hub as a short-form circuit, but this could lead to USB 3.0 hubs appearing on the market this year.

ASUS and Gigabyte have released motherboards that have USB 3.0 controllers and sockets on board. These may appeal to system builders and independent computer resellers who may want to differentiate their desktop hardware, as well as to "gaming-rig" builders who see USB 3.0 as bragging rights at the next LAN party. None of the laptop OEMs have supplied computers with USB 3.0 yet.

As far as the general-purpose operating systems (Windows, MacOS X, Linux) go, none of them have native USB 3.0 integrated at the moment but this may happen in the next service lifecycle of the major operating systems.

Some more benefits have been revealed including high-speed simultaneous data transfer (which could benefit external hard disks and network adaptors) and increased power efficiency, especially for portable applications.

Links

[1]
[/2010/01/google-takes-on-the-iphone-with-the-android-platform/#utm_source=feed&utm_medium=feed&utm_campaign=feed](http://2010/01/google-takes-on-the-iphone-with-the-android-platform/#utm_source=feed&utm_medium=feed&utm_campaign=feed)

Google takes on the iPhone with the Android platform

08/01/2010 07:02

Over the past few years, the coolest phone to be “seen with” was the Apple iPhone and and you were even considered “more cool” if your iPhone was filled with many apps downloaded from the iTunes App Store. Some people even described the iPhone as an “addiction” and there has often been the catchcry “an app for every part of your life” for the iPhone. I have covered the iPhone platform a few times, mainly mentioning a few iPhone-based DLNA media servers and controllers and the “I Am Safe” iPhone app. Other smartphone platforms like the Symbian S60 and Windows Mobile platforms fell by the wayside even though hardware manufacturers and the companies standing behind the platforms were trying to raise awareness of the platforms.

Then, over the last year, Google was developing a Linux-based embedded-device platform known as the Android platform, with a view to making it compete with the Apple iPhone. This year’s Consumer Electronics Show has become awash with smartphones, MIDs, smartbooks and other hardware based on this platform.

The main advantage of this platform is that it is a totally free, open-source platform which allows for standards-based smartphone and embedded-device development. At the moment, there is only one phone - the Nexus One - available on the general market. Other phones that have been talked about include the Motorola “Droids” which have their name focused on the Android operating system. But if these other devices that are being put up during the show are made available on the market, this could lead to a competitive marketplace for smartphone platforms.

Even the app-development infrastructure has been made easier for developers in some respects. For example, developers are able to design a user-interface that works properly on different handset screen sizes. This makes things easier for Android handset builders who want to differentiate their units with screen sizes. A good question to ask is whether a developer is allowed to bring their technology like a codec that they have developed or licensed to their project without having to make the technology “open-source”. This may be of concern to the likes of Microsoft if they want to port their technology to the Android platform. Similarly, would an app developer have to make their projects “open-source”, which may be of concern to games developers who have a lot at stake?

Once the Android platform becomes established, this could “spark up” Microsoft, Symbian and Blackberry to put their handset platforms on the map and encourage further innovation in the handset and embedded-devices sector.

Skype videoconferencing coming soon to regular TV sets

08/01/2010 01:08

Skype goes living room, embeds on LG, Panasonic HDTVs[1]

Skype, toujours interdit sur 3G, investit les écrans de TV - DegroupNews (France - French language)[2]

Skype Wants to Make Your TV More Social - GigaOM /NewTeeVee (USA)[3]

Skype offers living room TV action - The Register (UK)[4]

From the horse’s mouth

Get Skype On Your TV - Skype Blogs[5]

My comments on this topic

Previously, I had written in this blog[6] about the use of videoconferencing, especially Skype[7] and Windows Live Messenger[8] as a way for families separated by distance to stay in touch. This also included reference to a previously-broadcast television news article about this technology being used to bring older relatives who were at rest homes or supported-accommodation facilities closer to their families. The newscast showed images of the older relative at the supported-accommodation facility celebrating a birthday with the relatives who appeared on a large flat-screen TV set up as a videophone.

In that article, I had talked about integrating your flat-screen TV with your PC for video conferencing by linking your computer to the television via its VGA or HDMI inputs or integrating an older CRT-based TV using its composite or S-Video inputs so many people can benefit from the larger screen.

Over the last few days, I had read some articles about an announcement that Skype had made concerning integrating its functionality into regular “brown-goods” TV sets and associated equipment. The main thrust of this was to implement 720p HD Skype videoconferencing; and with selected Panasonic “VieraCast” and LG “NetCast Entertainment Access” TV sets, you add a webcam supplied by the set’s manufacturer to the sets and connect them to your home network to enable “PC-less” video conferencing. This definitely will appeal to people who find setting up or operating computers very intimidating and may also appeal to those of us who cannot stand the sight of computer equipment in the main lounge area and believe that computer equipment belongs in the den or study.

This will appeal to families who have distant relatives and want to use the TV located in the lounge room or family room to keep in touch with these relatives without much in the way of setup headaches. Similarly, these sets could lower the startup and ongoing costs involved with videoconferencing facilities for places involved with the care of senior citizens because the Skype-equipped TV sets will need very little in the way of staff-training and support costs. It will also appeal to small businesses, farmers and the like because they can benefit from

“big-business” videoconferencing at a “small-business” price without “big-business” setup hassles.

As I have said before, this could be extended to other “advanced-TV” platforms like most of the “set-top-box” platforms such as TiVo so that people who have video equipment based on these platforms could benefit from this form of video conferencing without having to add extra boxes or replace their existing TV sets.

Links

- [1] <http://blogs.zdnet.com/BTL/?p=29068&tag=mncol;txt>
- [2] <http://www.degroupnews.com/actualite/n4366-skype-telephonie-v oip-internet-television.html?xtor=RSS-1>
- [3] http://newteevee.com/2010/01/05/skype-wants-to-make-your-tv-m ore-social/?utm_source=feedburner&utm_medium=feed&utm_ca mpaign=Feed%3A+OmMalik+%28GigaOM%29
- [4] http://www.theregister.co.uk/2010/01/06/skype_tv/
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- [6] /2008/12/video-conferencing-in-the-home-network/#utm_source= feed&utm_medium=feed&utm_campaign=feed
- [7] <http://www.skype.com/>
- [8] <http://messenger.live.com>

Ethernet AV – What could it mean for the home media network?

01/01/2010 09:11

Will home networks bank on Ethernet?[1]

One of the next points of research that will be appearing for the home network is “Ethernet AV” or “AV-optimised networking”. The main goal with this research is to deliver time-sensitive content like music or video over an Ethernet-based network so it appears at each endpoint at the same time with the bare minimum of jitter or latency.

This research is being pitched at any application where a data network may be used to transport AV information. In the home, this could include multi-room installations where the same programme may be available in different rooms or multi-channel setups where a Cat5 Ethernet, Wi-Fi or HomePlug network link may be used to distribute sound to the rear-channel speakers. In a vehicle or boat, the Cat5 Ethernet cable could be used as an alternative to analogue preamp-level or speaker-level cable runs to distribute audio signals to the back of the vehicle or through the craft. The same method of moving AV signals can appeal to live-audio setups as the digital equivalent of the “snake” – a large multi-core cable used to run audio signals between the stage and the mixing desk that is located at the back of the audience. It can also appeal to the use of IP networks as the backbone for broadcast applications, whether to deliver the signal to an endpoint installed in a home network like an Internet radio or

IPTV set-top box; or to work as a backbone between the broadcast studios and multiple outputs like terrestrial radio/TV transmitters and/or cable/satellite services.

The main object of the research is to establish a “master clock” for each logical AV broadcast streams within the home network that represents a piece of programme material. This then allows the endpoints (displays, speakers) to receive the same signal packets at the same time no matter how many bridges or switches the packets travel between the source and themselves.

Once this goal is achieved at the Ethernet level of the OSI stack, it could permit one to implement software in a router to provide Internet broadcast synchronisation for endpoints in a logical network pointing to the same stream. This means that if, in the case of Internet radio, there are two or more Internet-radio devices pointing to one Internet broadcast stream, they appear to receive the stream in sync even if one of the devices is on the wireless segment and another is on the Cat5 Ethernet segment.

This issue will need to be resolved in conjunction with the quality-of-service issue so that time-sensitive VoIP and audio/video applications can have priority over “best-effort” bulk data applications like e-mail and file transfer. Similarly, the UPnP AV /DLNA standards need to implement a quality-of-service differentiation mechanism for bulk transfer compared to media playback because there is the idea of implementing these standards to permit media-file transfer applications like multi-location media-library synchronisation and portable-device-to-master-library media transfer. Here, bulk transfer can simply be based on simple “best-effort” file practices while the time-critical media synchronisation can take place using higher QoS setups.

The other issue that may need to be resolved over the years is the issue of assuring quality-of-service and AV synchronisation over “last-mile” networks like DOCSIS cable, ADSL and FTTH so that IP broadcasting can be in a similar manner to classic RF-based broadcasting technologies. This also includes using the cost-effective “last-mile” technologies for studio-transmitter backbone applications, especially if the idea is to serve “infill” transmitters that cover dead spots in a broadcaster’s coverage area or to feed small cable-TV networks.

Once these issues are sorted out, then the reality of using an IP network for transmitting media files can be achieved.

Links

- [1] http://www.eetasia.com/ART_8800559044_590626_NT_fd6e8ec8.HTM