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Digital Video:
A Layman's Guide to creating Video CDs and DVDs.

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Digital Video - A Layman's Guide to creating Video CDs and DVDs.

Sony, NO BALONEY!

Having recently purchased a new Sony DCR-TRV340 Digital 8 Camcorder, I was itching to create some digital video as well as try my hand at converting some analog video (*that is VHS to you old timers*) tapes.

The DCR-TRV340 camcorder has some great features like Super SteadyShot and Super Nightshot, which allows you to take video in complete darkness, 25x optical and digital zoom capabilities of 50x and 700x. You can also take digital stills and video and store them on a Sony Memory Stick module. It comes with an 8Mb stick.

Sony DCR-TRV340 Digital 8 camcorder

I was really impressed the first time I took it out to play with it. I could read the license plate on a car parked more than 200 yards away. No small accomplishment for a guy that wears glasses such as mine!

You can find one for around $550.00 or so if you shop around.
Look for it at www.sonystyle.com
I purchased mine at a Circuit City store in Visalia, CA (*the sales person was very helpful and knowledgeable*) and paid about $649 when it first came out. Of course by the time I bought the 10 hour battery, carrying case, the 5 year service protection plan and extended warranty, cables, tripod, extra tapes and a memory stick or two, the price tag crept up to about $1300.00. (*The Governor of California got his share of that as well*)

Sony 128 Mb Memory Stick

I had read several articles in a couple of magazines about digital videography (in my opinion, *the best one being Camcorder & Computer Video*) and felt confident I could accomplish anything I wanted to. Go to www.candcv.com to subscribe. ($11.88 for 12 issues, $22.95 for 24 issues)

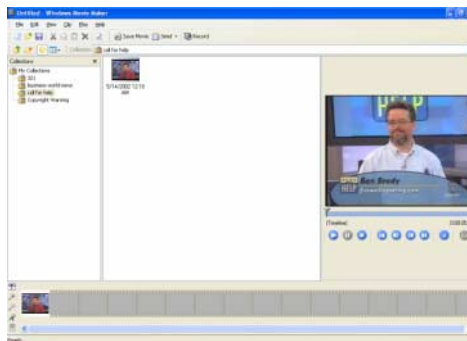The first decision I had to make was what hardware and software I was going to use.
Since digital video is extremely CPU intensive and the fastest CPU I have at my disposal is a 1Ghz Pentium III in my Compaq Presario 2700 Notebook, and that particular machine was running Windows XP, my first thought was "Gee, lets try to use Windows Movie Maker!"

I should mention here that my CD burning equipment is a CD-RW and not a DVD-R or DVD-RW, more on that later on.

A Microsoft solution?, NOT!

It was a good thought for about 1.672 nanoseconds... It's not that XP's Movie Maker doesn't work, it actually did pretty well, it's simply a matter of Microsoft's continuing attempt at controlling the world (*perhaps I have watched too many reruns of "Pinky and the Brain"*).

Windows XP Movie Maker

The problem with it is that it will only output digital video formats which are specific to Windows Media Player, i.e., WMV files. Granted, it will create all different levels of quality, depending upon your proposed use of the file, but that's about the only thing I could say that was worth while.

If you want to do anything with digital video that requires output to anything other than your hard disk or up to a web site, then Windows Movie Maker is not going to provide you with the functionality you desire. This is unfortunate because Microsoft did incorporate some nice user interface features into the application. In order to create a Video CD or a DVD you need to be able to produce MPEG-1 or MPEG-2 files. Windows XP Movie Maker produces MPEG-4 files.

That being said, Windows XP Movie Maker will function quite nicely as your video editor if you are on a budget. The video capture is very good and the editing controls, while not totally intuitive, are not to difficult to figure out. If you use Movie Maker as your video editor remember to output the edited video as an AVI file instead of the default WMV format. This way you can use other software to author the VCD or DVD and not have to worry about incompatibilities that might occur while importing your video clips.

Sony, BALONEY!

The software that is bundled with the camera, Pixela Image Mixer, www.imagemixer.com, is quite difficult to use due to the use of funny looking icons and doesn't have 'normal' menus and toolbar buttons.

The user interface is not intuitive at all and I never could figure out how to edit the video clips with it once I got them captured from the camcorder. As a software developer for more than 30 years, I have seen my share of bad user interfaces and this one is pretty lame.

Sony Pixela Image Mixer

The software is also very limited with respect to the file formats that are available.

This makes the package virtually unusable for all kinds of great video content that is available on a royalty free basis.

MGI Rides again... into the sunset.
Next, I decided to try my 'old standby' MGI VideoWave 4.0. MGI Software was recently purchased by Roxio. There have been some significant changes made to their web site, www.mgisoft.com.

VideoWave 4.0 is still supported and there has been an update recently to fix some minor glitches. I downloaded the updates and I was ready to go... or so I thought.

I captured video from my camera through the IEEE-1394 FireWire port on the laptop and everything went just swimmingly until I went to edit one of the scenes. For some reason, when you edit the clip and you want to play it in order to preview it in the "Cutting Room" in order to find the place where to set the "IN" and "OUT" markers, the audio mysteriously disappeared.

I'm pretty sure I didn't have that problem on my desktop machine the last time I used it with VideoWave, but currently that computer is under re-construction and I couldn't verify the "feature".

MGI VideoWave 4.0

Once again, I consulted the magazine articles and there were several other software packages mentioned, Pinnacle Software's Studio 7, which has consistently gotten great reviews from PC Magazine, Ulead DVD Movie Factory, Ulead DVD Workshop and Sonic MyDVD. So, armed with that information, I went searching on the worldwide web. First stop, www.google.com (where else?)

Pinnacle Software Studio 7
I decided to first try the software I had heard most about and found the trial version at www.pinnaclesys.com. I downloaded it and installed the program on my laptop. The installation went very smoothly and in a couple of moments I was ready to go. Then I hit my first glitch.

Pinnacle Studio 7

The trial version would not allow video capture from my camcorder. As a result, I was forced to download an example video file from the Pinnacle web site and capture my video clips with Windows XP Movie Maker as suggested above. I downloaded it and found the user interface to be quite nice and easy to use. There are loads of great video effects and transitions and I immediately fell in love with the video editing capabilities of the program.

I fired up the web browser and went looking for a place to purchase it. I discovered www.amazon.com had the best price at $59.95. (it usually sells for $99.95) I took out my credit card and ordered it. Unfortunately, I will have to wait for the CD-ROM to come via UPS in order to finish my tasks of converting some existing video.

I can't wait until it gets here because I would really like to make sure it works with my Digital Video camcorder. There were some messages on the user forum on their web site and a few customer reviews on Amazon.com that would suggest that the product has a bit of a small problem in capturing video. I am sure it will be a lot of fun to test.

The Pinnacle web site is very helpful and they sponsor a user's forum where you can converse with others and learn

some very cool tricks and tips that will save you lots of time and make your video editing more professional looking. As a side note, if you intend on making DVDs or VCDs with Pinnacle Studio you will need to obtain other software capable of authoring and burning the actual disk.

Ulead DVD Movie Factory
I then went to www.ulead.com, home of many popular digital multimedia programs where I found two different Digital Video products, Ulead DVD Movie Factory (*$44.95*) and Ulead DVD Workshop (*$279.95*).

I will tell you right now, if you are at all serious about creating DVDs, VCDs or any other digital video content, given the features of DVD Workshop, don't even bother with the DVD Movie Factory. Just step up immediately to the Workshop program. You will not be disappointed. If you are just tinkering around, you may find DVD Movie Factory useful at the start but you will want to upgrade soon enough.

I tried out the DVD Movie Factory but quickly found that it would not suit my needs in terms of what I was trying to accomplish.

Ulead DVD Workshop
Author! Author!
Those of you who are familiar with DVDs know they have some interactive menus at the start of the DVD and when you put them into a DVD player they allow you to either play the movie or access other special features that are found on the disc.

An interactive DVD menu

These features include director commentary or perhaps an additional documentary showing how the special

effects were created (my current favorite disc for these extra features is "The Hollow Man")

Although the name implies one could do all of the various tasks required to produce a VCD or DVD, the name of the product is somewhat of a misnomer. They should have actually called it "DVD Super Menu".

DVD Workshop has very little in the way of actual video editing functionality. There are no fancy transitions or whiz-bang video effects, but don't let that stop you from buying this tool!

It was developed to make the construction of the VCD and DVD user interface as easy as possible.

Ulead DVD Workshop

Authoring the actual DVD requires one to assemble the component video clips into chapters and then reference the chapters in some logical manner in order for the user to access them. DVD Workshop from Ulead makes this an incredibly easy process!

I loaded DVD Workshop onto the machine and once again the installation went very well under Windows XP. The software recognized my camcorder and IEEE-1394 FireWire interface and so I set off capturing video.

Once again, as with Ulead DVD Factory, I found there were some less than user friendly editing controls when attempting to set the "IN" and "OUT" markers for the video clip I was editing. Not to be daunted though, I pressed on and finally was able to get them set to the proper time codes and the moved to the next step in the process, creating the menu.
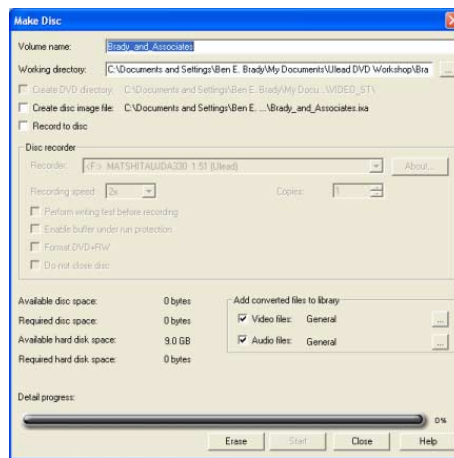
I created a simple menu and fired off the built in pre-viewer to see how the menu and Video CD would play. It actually looked pretty good thanks to the roughly 300 discrete images and audio clips that come with DVD Workshop. I then clicked on the tab at the top of the screen to output to Video CD.

The rendering process was shorter than that of DVD Movie Factory, however, it was still pretty darn slow. It took approximately 45 minutes to render and burn the disc for a 7-minute video clip.

The program goes through several stages of converting the assembled video clips and menu content before it actually writes the VCD or DVD image. There is an option to save the rendered CD image file so you can burn multiple copies of the disc.

Honey, Are You Cooking Something?
Possibly, the only fault I could find with the program is that it creates a proprietary format for the DVD, VCD or SVCD image file which means that you must use DVD Workshop to actually burn the disc. It would have been much nicer if they had provided a way to create standard .ISO disc image files so you could use any burning software you might like better.
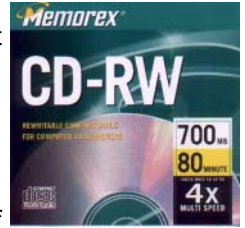

DVD Workshop disc burning screen

This became a problem for me when I went to actually burn the disc as I kept getting an error that didn't make any sense. If I had been able to simply burn the disk with Click N Burn Pro, Nero 5.5 or EZ CD Creator it would have been a lot nicer. Ultimately, the error turned out

to be caused by my choice of CD-RW discs. The CD-RW drive in my laptop doesn't like 10x CD-RW blanks. RecordNow Max provided the appropriate error message when I decided to try to write a disc with some other information on it.

I had a box of Memorex CD-RW 4x blanks which would work for DVD format and allow the DVD player laser read them. The other nice advantage is that I could erase them and try again if I needed to.

Memorex CD-RW 4x

Once I used the correct blank media, DVD Workshop performed the disc burning fairly well.

The bottom line is that you will need to have a fairly powerful computer, such as a PIII 1.0 GHz or above and plenty of RAM. I would recommend 384 - 512 Mb of memory and a HUGE hard disk, in order to get the best results from Ulead DVD Workshop (1 Hour of DVD Video requires 13 gigabytes of hard disk space). Ulead states minimum requirements are Windows 98, a PIII 450 and 64 Meg of RAM.

Their recommended requirements for normal usage are a 950 MHz Pentium III and at least 128 Meg of RAM and Win9x/Me. I would not even try to produce digital video with Windows 9x/Me. Move up to Windows XP instead.

Ulead DVD Workshop performed well and it will enable you to create some great looking professional VCD and DVD menu systems, complete with music and full motion menu objects. It is well worth the money.

(*Ulead appears to be very supportive of the APCUG membership and provided me with an NFR copy of DVD Workshop in order to complete this article. Their web site is well designed and they have a responsive technical support department. Be sure to thank them by purchasing DVD Workshop or one of their other great digital image or video processing products.*)

The Plot Thickens...

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Some of you may know the Video CD format has been around for quite some time, as a matter of fact, since 1993. It was never really big here in the USA, but it really took off in Asia. Most stand-alone DVD players will support the MPEG-1 VCD format. There are a few that don't so make sure you check the DVD player compatibility listings at www.vcdhelp.com.

If you don't have a DVD-R or DVD-RW burner, you can create a VCD with your CD-RW and still have a copy of that priceless video to preserve in a digital format, which you will be able to view on your television. The picture quality will be approximately that of a VHS tape.

InterVideo WinDVD

Fortunately, I was able to create a disk that would play on my Panasonic DVD-A120 stand-alone DVD player hooked up in the living room. Interestingly, it would not play on the DVD player in my laptop using WinDVD. (I later found a setting in WinDVD that would allow me to play the VCD on my laptop)

I then decided to try to make an MPEG-2 DVD formatted video disc using a CD-R blank. Oops...! That doesn't work! Don't waste your time trying either! Trust me on this... unless you have the Magnavox MDV-450 DVD player. More on that later.

Compaq Presariao 2700

"Standards, We Don't Need No Stinkin' Standards..."
The laser in a stand-alone DVD player does not operate at the same wavelength as a CD audio player or a CD-ROM drive and the color of the dye used on a CD-R is not compatible with the wavelength used by the DVD player.

I created 4 'coasters' before I found out this little tidbit of information from www.vcdhelp.com (*this is a terrific web site for all kinds of information on Video CD, DVD-R and DVD-RW creation*).

If you have a standalone DVD player and you would like more information regarding the formats it will actually let you use, go to www.vcdhelp.com and look up your model. There are hundreds of units that have been reviewed and it is very likely that yours will be listed there.

The light IS on... Really!
I created a "high quality" DVD disc of my 7 minute and 19 second video clip at 8000 Kbps bit rate.

I popped it into the DVD drive on my laptop and it started playing... but it certainly wasn't pretty. The audio was out of sync with video and there were lots of little clicks and pops. Apparently, there was a problem with the rendering of that format using the equipment I had. I created another DVD disc, this time at the medium quality 6000 Kbps bit rate. The result was even worse!

Neither one of these discs would play in my stand-alone DVD player either! Although they play in the DVD drive on the laptop just fine, with the exception of the quality issues (more on this later). By the way, be sure to turn of Auto Insert Notification for your CD-ROM burner! This can make a huge difference in performance.

I consulted the www.vcdhelp.com web site again for compatibility details for my standalone DVD player and found a footnote there stating the DVD format should work at 2400 Kbps bit rate.

I created another DVD disc and it played beautifully on my laptop DVD player, however, it would still not play on my Panasonic DVD player. The only format that would play on it was the Video CD formatted disc.

There was a slight catch to that though... I had to put the disc into the player, wait for an error message to come up, turn off the power and then turn it back on again. After I did this it would recognize the VCD and start playing.

A Digital Video Road Trip...
Armed with all of the DVDs and VCDs that I authored on my laptop, including those that bombed on my Panasonic DVD player, Rita and I headed up to Best Buy in Fresno to test out some other DVD players to determine the level of compatibility. After all, this exercise would not be complete without being able to use the discs in more than simply our DVD player.

When we arrived at Best Buy (www.bestbuy.com) at River Park we were greeted by their friendly security person at the front of the store. We explained why we were there with several DVDs and he directed us to speak with a salesperson in the Video department after he quickly put a sticker on our DVDs to identify them as our property.

Able he was!
Back in the video department we found a salesperson that was more than willing to help. He proved to be particularly helpful in our testing and directed us to several DVD units. We tested a new progressive scan unit from JVC (*which didn't do so well*) and a newly released Magnavox MDV-450.

The Magnavox unit played EVERYTHING we threw at it! It will even play MP3s. This was such a great unit we had to buy one! For under $100.00 it is probably the best deal on the market at this time.

The MDV-450 will play CD-Audio, DVD, VCD, SVCD, DVD-R, DVD-RW, MP3 and Picture discs.

I also created an XVCD disk and it played that one as well, however, XVCD is not an official standard.

Sonic... Boom or Bust?
As I mentioned earlier, I had also considered a product called Sonic MyDVD ($79.00) but I could not review it as the supposed free trial version could not be found on their web site, www.sonic.com even though there were links that stated it was there. Up comes

the page that says it is not currently available.

I have not had any reply from Sonic regarding this issue as of yet. If anything changes I will let you know about their product once I get to try it out.

In Conclusion...

I am looking forward to getting my full copy of Pinnacle Studio 7 however, I will miss using MGI VideoWave 4.0. I had a blast using it while it lasted. Now I can convert those silly home movies I took of Hurricane Bob as the eye of the storm passed over me when I stopped in Rhode Island in '91. I'll let you know how the Pinnacle product works out!

Ulead DVD Workshop is a great product and the easiest way I have found to author and create VCD and DVD discs. There are other less expensive tools (as well as freeware) that will allow you to create the VCD or DVD disc, but all of them that I have tried to use were much more difficult.

If Ulead were to combine DVD Workshop with full video editing capabilities similar to that of Pinnacle Studio, complete with transitions and a more intuitive video editing user interface and dropped the price to $149.95 they would have a killer product. One that could most certainly take the Digital Video user community by storm!

I guess the next piece of hardware I am going to get will be a DVD-R or DVD-RW drive, and I can hardly wait!