

THE FUTURE IMAGE REPORT

THE DIGITAL PHOTOGRAPHY AND INTERNET IMAGING AUTHORITY

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The Future Image Report is published 10 times a year by Future Image Inc., 520 South El Camino Real #206A, San Mateo, CA 94402. Phone: 650-579-0493 Fax: 650-579-0566. Website: www.futureimage.com
Subscription information is on page 15.
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KODAK, MICROSOFT SETTLE WIN XP IMAGING ISSUES

By Paul Worthington

In our last issue, *Future Image* presented a detailed overview of the new digital imaging functions built into Microsoft's upcoming PC operating system. We also noted the protests Kodak was lodging: that it was difficult to install its own software under Windows XP; that Microsoft could divert Kodak's customers; and that Microsoft could potentially assert control over a significant portion of all digital imaging business.

As we were going to press this month with a detailed presentation of Kodak's side of the story, Kodak and Microsoft announced that they'd settled many of their disputes.

Primarily, Microsoft changed one dialog box so that its default view shows more than just Microsoft's imaging software. Also, Microsoft's functions will be clearly labeled as proprietary company-specific choices, not generic tasks. Finally, Microsoft will now allow vendors to install a driver specific to their cameras; Kodak says it is submitting its PTP driver to the Windows Hardware Quality Labs for testing.

In a statement, Microsoft's Vice President of Windows Chris Jones says, "Kodak is an important partner for Microsoft. We are pleased that we've been able to incorporate their feedback and will continue our communications on ways to improve the digital photo experience."

In this issue, we present our interview with Kodak COO Phil Gerskovich — conducted just prior to the agreement — as we still believe the matter deserves to be discussed in detail. Many news reports in recent weeks have glossed over Kodak's concerns; while we do not believe Kodak was acting totally as an altruistic agent of consumer choice, as some of its claims seemed to assert, we do think many of its criticisms, as detailed in the following pages, were justified.

BATTLE LINES: FUJI SIDES WITH MICROSOFT

The profit potential of online imaging is prompting many of the top companies who could dominate the field to draw battle lines: at the beginning of August, AOL and Kodak updated the "You've Got Pictures" service [see page 11], while Microsoft enlisted Fuji's support for its upcoming Windows XP and its menu of imaging capabilities.

Kodak's and Fuji's rivalry is well known; AOL and Microsoft are fighting it out in the fields of instant messaging, ISP offerings, and, potentially, control of the PC desktop and future digital content distribution.

Just as Kodak formalized its complaints regarding Windows XP's imaging functions, Fuji promoted a "strategic relationship" with Microsoft, whereby "it is strengthening its on-going relationship... through its involvement in the fulfillment of Microsoft Windows XP online printing service orders... Fuji's Frontier digital minilabs will be used for processing Windows XP orders."

In Microsoft's XP publicity, Fuji executive vice president and chief operating officer Stanley E. Freimuth was the first executive quoted, saying Fuji supports Windows XP with its FinePix digital cameras "and through fulfillment of Windows XP online printing service orders."

The move is not a complete surprise, as Fuji already [*continues on page 3*]

EXECUTIVE INTERVIEW

KODAK VP DETAILS WINDOWS XP ISSUES

By Paul Worthington

Kodak vice president Philip Gerskovich is the chief operating officer for Digital and Applied Imaging. He has been with Kodak since 1999, after stints with Data General, Dell, and IBM.

Gerskovich: Kodak's position is that we think consumers should be able to easily choose whatever software they would like to work with their cameras and to manage photos on their desktop.

It appears to us, by looking at the beta versions of XP, that it is much more difficult than it needs to be for consumers to use anything besides the Microsoft functions built into XP.

Is the primary problem getting Microsoft's stamp of approval via a 'signed' driver and application? Without it you get all kinds of warnings and default "Cancel" buttons when installing your software in XP.

Kodak has really taken the lead in pushing PTP along. We've long been a supporter of it. In our view, everyone has been in camera driver hell for the last 4-5 years; we had to support way too many drivers for way too many platforms. By agreeing on a common interface protocol between cameras and host devices, everyone's life would be easier.

The difficulty has come because Microsoft (at the same time they've implemented PTP) has also built within XP a number of photo functions, and these functions are strongly linked to their PTP driver stack. It is extremely difficult to not use the Microsoft photo functions when you use the PTP driver stack.

And you believe the functions and stack do not have to be connected?

They are really unrelated, in the sense that there is no reason to use the Microsoft functions merely because you use the Microsoft PTP driver stack — except for the fact that Microsoft makes it difficult to not do that. There should be no technical barriers to using

one without the other.

That was our thought all along, and that is how it works on Apple Macintoshes. It's quite easy to use the driver stack without using the other functions in that operating system.

In the case of XP, from what we can see in the betas, Microsoft makes it very difficult to not use the Microsoft functions if you use the driver stack.

Can you get around using that driver?

Our first position is that we haven't wanted to do our own PTP drivers for

Windows. We do have a PTP driver now: it ships today with the DC4800 and all the EasyShare cameras.

It was our plan to stop using that driver when XP came along. But now, considering how difficult it is to use Kodak's application software when Microsoft is tying their own

photo functions to the use of their driver, we considered the possibility of bringing forward our driver into XP.

But we've been told by Microsoft that they won't 'sign' a PTP driver besides their own.

And that means installing your own driver would trigger all kinds of warning boxes the average user won't go against. What is the justification for that?

You have to ask them.

That was a formal communication?

Absolutely. They might change their mind — but that is the current state of affairs.

I would encourage you to ask them point blank if they will sign an alternative PTP driver stack. See if you can get them to comment. I predict you will get a rather long answer.

It would be helpful to everyone in the industry to get them clearly on the record, to state business direction.

So is that your primary issue now?

Driver signing is an important issue, but it's not the only one. If you use the Microsoft driver, it is confusing and difficult for the average consumer to not pick as the default the Microsoft operating system's photo functionality, rather than any other software the user might have installed. We think most consumers will be confused, and end up using the built-in functionality in XP rather than the third-party software that they loaded.

It always takes a high-end user to override the defaults of the OS...

Right. If you look at that box [in the XP screen shot] it's very confusing.

Here's the sequence: You buy a Kodak camera. You install the software, and presumably put the manuals away. You connect the camera or the dock, press the button — and this box pops up that says DC3600 digital zoom camera. Then it says select the program to launch for this action.

There is only one item highlighted in the box — it looks like it only has one item in it, and it says Camera/Scanner wizard.

Gee, that looks official doesn't it? It looks



For Kodak to install a proprietary driver, Microsoft requires Kodak have their drivers "digitally signed." When a user attempts to install a driver that has not been signed, they receive unclear but dramatic warnings.

Let's go up to a higher level than driver signing: A lot of this brouhaha is a result of PTP. It is a standard protocol for communicating between cameras and various host devices: PCs or set top boxes or other appliances. It allows basic camera functionality to be controlled from a host device.

like a dialog box that came from the camera, because it has the camera name on the top. But if you click the default "ok," you don't get the Kodak software you just installed; instead you get the Microsoft operating system functionality.

The only way to get the Kodak software is to click on the down arrow in the dialog box which will then pop up a screen and show you the Kodak software. But you have to take that second step, and there is no prompting to do that.

To get that functionality, do you have to have a signed driver?

No, this is using their driver stack.

You're using the Microsoft PTP driver, but it is difficult to chose Kodak's application.

Right. The issue is that you have to go through this dialog box, which is, at best, confusing. And if you click "Always use this program for this action," and you happened to get the software selection right, then if you connect the camera to the other USB port on the PC, you will get this box again.

There are also new functions in the file folders, new tasks. If you click on the one that says "Connect to the camera," you once again will not get the Kodak software; even when you made the earlier selection, it does not 'pass through' to tasks and file folders.

You are implying there are two

remedies needed here: an expandable selection screen that would show any application that might be installed [not just the OS function]. The second would be to pass the selection to all other OS tasks.

There are a whole bunch of things that should be done to make this more consumer friendly.

First, the software should be able to set this function correctly at its installation. There is no reason to have to do this after installation, other than to divert customers to the Microsoft functions.

It is very common today for applications to associate themselves with file types. We think Microsoft is making it unnecessarily difficult to associate imaging applications with camera connect events, by forcing users to go through these dialog boxes much later than installation. And furthermore, when they do get the dialog box, they only get the Microsoft application highlighted.

It's obvious the box could be bigger, so you can see all the applications installed, and the last software application installed should be the default.

The Microsoft software is not identified as theirs... and most users will go with the default anyway, regardless of how it is labeled. How would you address this?

At installation, we should be able to establish a default. If a Kodak camera connects to a PC with the Kodak software today, it works

seamlessly [on Win ME and 98]. Why should there be a dialog box that pops up that will easily divert many customers to the Microsoft functionality?

Are you trying to elicit the technology industry's support?



Kodak VP Philip Gerskovich

We are not doing a lot specifically to engage support, apart from talking with people such as yourselves. We are really just trying to educate people about what is happening with XP — to really look at it, and understand how it works with regard to their own products.

While there certainly are some people who would be content to let the Microsoft operating system's functions take over all of the imaging applications, we think a lot of

[Continued from page 1] provides the photofinishing for Microsoft's PictureIt! on MSN.

Kodak did participate in Microsoft's July 31 event in New York to promote Windows XP, but not before issuing a disclaimer stating its position that Microsoft has "placed unnecessary restrictions and limitations on non-Microsoft photography applications."

Also at the Windows XP event in New York were more than 20 companies, showing hardware and software solutions for digital photography, including Canon, Compaq, Dell, Hewlett-Packard, Intel, Olympus, SanDisk, Sony, and Shutterfly.

LEGAL CHALLENGES

Barring injunctions, Windows XP will be available October 25. Microsoft has millions of dollars in pre-publicity riding on the launch date, and many claim the PC industry as a whole would be hurt by delays.

Nonetheless, as part of the campaign to limit Windows XP's imaging functions, New York Senator Charles Schumer publicly leveled charges against the operating system, saying it must be made more open to rival software applications or the government should delay its release. [AOL is also headquar-

tered in New York.] Microsoft responded in a statement asserting that "the complaints of AOL and Kodak" do not "merit a congressional hearing." Whether Schumer will continue his attack on Microsoft in light of Kodak's settlement remains to be seen. The AP reports Schumer said of the settlement, "Hopefully, this is the first in a series of steps so there's fair competition."

NOT OVER YET

Reports indicate that the issues were finally resolved by the CEOs, Microsoft's Steve Ballmer and Kodak's Daniel Carp.

However, while most of the public issues have been laid to rest, the two companies are still arguing over royalties: that is, just how much of each photofinishing transaction Kodak will give to Microsoft for those customers who, despite the agreed-on "fixes" nonetheless use Microsoft's functions and Internet routing to send images to Kodak's printing facilities. Under a similar arrangement, Kodak shares revenue with AOL for photofinishing orders going through the two companies' "You've Got Pictures" service.

However this finally concludes, it would seem that, as photography shifts from film to digital, Microsoft has staked a claim in yet another emerging market.

people have other ideas, and would like to make integrated workflows across their products and PC software.

Microsoft seems to portray that everyone else is OK with XP's functions — that Kodak is the only dissenter, or this is a Kodak vs. Fuji issue, rather than an industry one?

This is not a Kodak vs. Fuji issue at all, nor does it have anything to do with AOL. We've had a relationship with AOL for a number of years, but that is non-exclusive. This has nothing to do with that.

How is Microsoft responding to your suggestions for changes?

I can't comment on our discussions with them. I will say that we've had a long partnership with Microsoft, and we really hope Microsoft will do the right thing for consumers, and give them the choice they deserve.

Are they being responsive?

You have to judge that by some of the press lately, I guess. I can't comment more than that.

Kodak spokesman Anthony Sanzio — We have been discussing this with Microsoft for a long time, dating back to Comdex 2000. It's unfortunate it has come down to a public dispute. It is an ongoing conversation. You can see the changes Microsoft has made in the ongoing beta versions of XP, and that speaks for itself.

Is Kodak seeking an injunction against Win XP distribution?

Gerskovich — I can't comment on that. We hope to resolve all of our issue with Microsoft.

Sanzio — Microsoft has publicly stated the code is almost frozen. They do need to ship to OEMs by the end of August. I'm sure you have read about Senator Schumer's press conference and what he had to say about Microsoft. Clearly we have had discussions with the Senator about this, but we would prefer to resolve this with Microsoft if Microsoft is willing to do so.

What happens if you can't resolve it, and they ship Windows XP as is?

Gerskovich — I can't comment on that. What we see in the current versions of the beta is unfriendly to consumers and we hope it will change between now and then.

ONLINE SERVICES

Let's go over your position regarding Microsoft listing online photofinishers.

Gerskovich — The issue is that the Microsoft operating system has been found by the courts to be a monopoly.

The issue for the industry to get its head around is, in what ways can Microsoft add functions to the operating system that they are going to make money on? Can they add functionality in a way that other people are not allowed?

It's one thing to say that Microsoft is going to add applications on top of the operating system and they are going to use the same APIs and interfaces as everyone else to do that. Then everyone is competing on a fair and equal basis.

But look at XP and the file folders: that is a really clever thing they have done. Whenever the operating system detects a picture in a file folder, it pops up a new set of tasks alongside the file folder. Included in these tasks is the Microsoft function for uploading the pictures to the Internet and ordering prints.

Now that is great and wonderful — except no one else can add a task to a file folder except Microsoft. So their function has a priority in the operating system that no third party application can get.

In my mind if Microsoft can add a task to a file folder, everyone should be able to. This is not a Kodak issue — it is one of fairness. Shutterfly should be able to have a task level option to upload to Shutterfly... Everyone should be able to play by the same rules.

If the upload function gave a list of online providers, would that satisfy your condition? Or is that the second problem, that Microsoft inserts itself into the transactions?

The functions Microsoft has added come with a lot of restrictions — one of which is a tax to Microsoft.

Additionally it comes with business and technical restrictions, including the use of PassPort [the basic upload tool built into Windows] for uploading. There is a real practical issue there: Passport is a very simple, basic uploader. As shown with Ofoto's and Shutterfly's uploaders, it is possible to make a much more sophisticated uploader than the function Microsoft has built into the OS.

If Microsoft can put their list in a folder-level task and sell spots in it, then we should also

be able to put our own tasks in a folder and do what we would like.

Microsoft says other services can populate those dialog boxes.

Two issues: At the highest level, there are file folder tasks. Only Microsoft can add functions to file folders. They have named their task "Order prints online," but it really should be called "use Microsoft's uploader." It's a Microsoft-specific function.

Second, within the Microsoft function, there are a number of slots, with six slots "above the fold," meaning you don't have to scroll to see them. Our understanding is the user can add sites, but they will remain "below the fold"; you will have to scroll every time to get to them.

And they will still be burdened with the limitations of the Microsoft upload facility.

Once you click on that link you are in a Microsoft facility that has limitations and issues around it.

You have to get in a business relation to use their tool, and it's not a very good tool.

The closest analogy to the tasks is in the current version of Windows: you can right click to get a list of tasks, and any third party can add to that list today. [With XP] Microsoft has gone backward and taken away the ability to add tasks. They have put the tasks in the file folder so they are there staring you in the face, and then they limit the ability to add things to that task list.

Your issue is what are legitimate additions to the OS, versus bundled-in applications.

As Microsoft keeps adding functionality to the OS, they are competing — with their OS — with an increasing number of applications.

What are the implications? If Microsoft does not cede to any of your suggestions, what happens?

That will mean a significantly worse experience for consumers — where it is very difficult for them to use the integrated camera / host software systems they're buying.

And for the industry?

I think it would be bad for everyone — not just Kodak, but for anyone who wants to deliver the easiest-to-use photo systems. ■

Please see page 14 for some of Microsoft's responses to the charges in this interview.

TECHNOLOGY UPDATE

DVD PLAYERS DISPLAY STILL PICTURES

DIGITAL PHOTOS MOVE TO THE LIVING ROOM **By Paul Worthington**

New technology may end the stranglehold the PC has on digital imaging. The combination of desktop DVD recording and TV-connected DVD players is about to become a widespread, easy-to-use platform for digital photography.

In that environment, digital camera users will be able to record their shots to a CDR or DVD-RW on their PC, and then share their photos with friends and family on a TV set equipped with a DVD player. This should be a faster, simpler method for sharing photos than any other now available, including, under current infrastructure conditions, prints, email, and the Web.

We see this as a potentially huge boon to the digital imaging industry. Using DVD players as a focal point for sharing photos could catch on like wildfire. DVD players are already the fastest-growing consumer electronics device ever — about 30 million players are expected to sell this year, 14 million of those in the U.S. According to the Consumer Electronics Association, 2.3 million DVD players were sold during the usually slow first quarter of 2001. Fueling the fire, standard DVD players now sell for just over \$100.

CURRENT PC-CENTRIC SHARING

As it stands now, digital photographers who want to share their images generally transfer them from the camera to the PC, and then upload them to a website or send a few images via email. However, online imaging means either reducing the resolution and file size of the photos, or enduring long upload times over a standard dial-up connection. It also requires that those who view the shots use a computer with an Internet connection.

Alternatively, digital camera users can use a PC to copy images to standard CDR discs — and again insist that friends and family own PCs to see the pictures themselves.

There is also, of course, sharing via prints, whether through home-based inkjet printers or service-based (clicks or bricks) silver halide photofinishing. However, printing in any volume can be both expensive and time consuming, and retreating to the analog world

means losing the benefits of digital.

FUTURE PC-INITIATED SHARING

The photosharing picture looks very different with the emergence of a ubiquitous and easy method for burning optical discs that run in consumer DVD players.

A digital photographer can then copy full-res images to DVD+RW discs [which hold almost eight times the data of a standard CD] and all anyone needs to see the shots is a TV and a standard DVD player. An alternative to this method uses 650MB CDRs, encoded so they will also play on most current DVD players [those compliant with the Optical Storage Technology Association's MultiPlay specification, which supports CDR and CDRW discs.]

Indications that this new paradigm is catching fire are recent developments that span the breadth of PC-based authoring, consumer DVD playback, and new PC-free workflows.

PC-BASED AUTHORING

Pioneer New Media Technologies' DVR-A03, the first drive to support DVD-R/RW and CDR/RW in one device, has entered the market at a \$799 price point. Best Buy, the top U.S. consumer electronics retailer, will be the first to offer the drive for sale. With 4.7GB of storage capacity, Pioneer's DVD-R media has a life expectancy of more than 100 years. The discs are playable on most standard consumer DVD players.

We first covered Pioneer's new device in January; **Apple Computer** was the first to demonstrate the drive, as part of an easy method for making DVDs on a Macintosh computer. Compaq announced a similar DVD recording system for its upcoming Presario 7000.

Hewlett-Packard has also announced plans to incorporate recordable, rewritable DVD (DVD+R/RW) drives into its HP Pavilion home PCs. The addition will let consumers store, edit, and preserve video; and create and play custom music, data, or photo CDs and DVDs. HP is a founding

member of the DVD+RW Alliance, a group of leading personal computing and consumer electronics companies, including Philips, Sony, Ricoh, Thomson Multimedia, MCC/Verbatim, and Yamaha.

NO NEW HARDWARE REQUIRED

One can actually make a disc today on a PC that will play photos on a DVD system — without buying a new drive. Sunnyvale, CA-based **Oak Technology** is shipping **SimpliCD**, recording software that lets a PC with a standard CDR drive copy a collection of digital photos to a disc that will play on TV with a standard consumer DVD player. The software, priced at \$49 for a download or \$64 retail, has a Picture Slide Show feature that automates the process of encoding digital photos to the VideoCD format that will run on current DVD players.

In Future Image's own tests, creating the VideoCD was, well, simple. The disc worked in a 6-month old DVD player, and the still photos looked great on a 32-inch TV.

The company is the only developer offering PC software that encodes a CDR with a DVD-playback capable slideshow, according to Vadim Brenner, Product Marketing Manager for the Optical Media Software Group at Oak Technology.

SimpliCD writes two tracks on the disc: 352x240 resolution images are on a VideoCD 1.1 track for playback on PCs [the older format is read by Windows Media Player]. The VCD 2.0 track, read by most DVD players, holds 704x480 images. The software automatically reduces the resolution of the images it copies to the CD to a size that will display on a standard TV.

As noted below, upcoming DVD players will decode JPEGs of any resolution, and so won't need the images to be first downsized and then encoded in the VideoCD format. However, Brenner notes, there are already 1.50 million DVD players on the market that do not have that upcoming JPEG capability, and that number is still growing.

Ninety percent of recent DVD players will read CDR and CDRW discs, he says, and

support the VideoCD format – but not raw JPEG decoding. Also, he adds, upcoming [but for now undisclosed] features in the program will make it desirable even to those with next-generation DVD players.

CONSUMER DVD PLAYBACK

Compatibility trends are moving both ways: Not only will PCs be able to create DVD-compatible media, upcoming DVD drives will

“WE DON’T THINK THAT JUST ADDING PICTURE VIEWING IS THE END-ALL FOR THIS PLATFORM. THERE IS A LOT OF EXPANSION IN THIS AREA FOR DIGITAL IMAGING.”

decode and display JPEG photos recorded on ordinary CDR discs.

LSI Logic’s ZIVA-5 DVD chip will automatically scale photos to fit the TV screen, present thumbnails, and even rotate images. LSI says it is “the number one supplier of DVD ICs worldwide.” New players incorporating the chip are due by the Christmas shopping season in the U.S. and are expected to cost no more than units without the capability. LSI’s DVD player-manufacturer OEMs include JVC, Samsung, and Hitachi.

DVD sales are growing rapidly, says Tim Vehling, LSI Logic’s Director of Marketing for Consumer Products: 18 million sold in the year 2000, 28 million in 2001, 40 million sales are expected next year, and more than 50 million by 2003. LSI purchased C-Cube Microsystems in May, Vehling says, to become a larger player in the consumer electronics space. C-Cube had long been developing MPEG decoders for DVD players and the Video CD market in China.

“We’ve been adding more features to our products with each generation,” Vehling says, “and one of them was JPEG image viewing.” C-Cube’s latest processor, the Diva 5, will now provide on-the-fly JPEG still image decoding in the DVD players from a number of OEMs this fall.

The models coming out soon will display JPEG images near-instantaneously, Vehling says — even multi-megapixel photos. The limiting factor is not the processor, however; a DVD player’s still image display is limited by the read-speed of its disc drive, and “there is very little memory for buffering images,” he adds. Image display on a PC is easy, he notes, due to a PC’s high-speed drives and large amounts of memory. DVD player

manufacturers are unlikely to increase the speed of the drives, according to Vehling, but increases in Ram will come when necessary to enable additional features.

The DVD player has even greater potential, Vehling says. For example, the Diva chip is capable of running an Internet browser. “We don’t think that just adding picture viewing is the end-all for this platform. We see the DVD platform moving from viewing

to a distribution model. You could add a CDR for disc duplication; jacks for connecting digital camcorders; USB for devices and printers; Memory interfaces; even hard disk drives for photo archives. Internet connections can transfer images to and from websites. There is a lot of expansion in this area for digital imaging.”

Not surprisingly, **Kodak** is all over this announcement as a way to promote its **Picture CD** service, which lets consumers receive CDs with scanned images when they get their film processed and printed. LSI’s DVD player-manufacturer OEMs will be able to mark their devices with a “Picture CD Compatible” logo. Also, digital camera owners can upload images to the websites of Kodak’s retail partners, such as CVS, and order Picture CDs with 200 images for \$15.

Maxime Elbaz, Kodak’s worldwide business development manager for consumer product and imaging services, stated that the new DVD players will let Kodak reach the mass market, “taking advantage of digital imaging without having to use personal computers. We expect to see quite a boost in the sales of Picture CDs. Now you have two different platforms for Picture CDs, and we are making it easier for the consumer who still feels threatened by computers — they don’t have to have a keyboard, just their remote and the TV.”

Following on the heels of the LSI announcement, Kodak also threw its support behind a similar chipset from **ESS Technology**.

“We are agnostic as far as who is providing the chip,” says Kodak’s Elbaz.

ESS sees future models of its players will also have Web browser and email capabilities, and users can send images from a Picture CD through a dial up Internet connection. ESS’ subsidiary Vialta will make

and sell its own multifunctional “ViDVD” player.

Finally, hardware maker **Apex** announced with Kodak that the Digital 5131 player will retail this month for less than \$200. The device uses ESS Technology’s chip to display digital photos on a standard TV screen.

STILL TO COME: PC-FREE SOLUTIONS

Clearly, we are just at the beginning of a wave of DVD- and TV-centered photography solutions. Vendors are already looking at taking the process one step further by removing the PC from the equation.

We’ve previously noted **Sony’s** \$799 home printer with a CDR/RW drive and TV-output. It’s aimed at being a component in home entertainment systems, with a slide show function and a wireless remote control. In May, Sony showed its Picture Park, a CD player it calls a “digital picture filing system” on which customers can “archive, organize, display, and transfer digital images.” The device will read digital camera media, and copy the data to a 5-inch CDR or CD-RW disc. It connects to a television, and comes with an infrared remote control for zoom, rotate, and other functions.

Most recently, **HP** announced its first living room component, the HP Digital Entertainment Center. The stand-alone product supports Internet connectivity and has its own CD recorder. It will also play streaming video through an attached TV monitor. HP says the device will ship in time for the 2001 holiday season.

HP’s licensing of PictureIQ’s PhotoBoard [an integrated hardware and software solution] indicates there may be more to come.

When PC-less solutions that address the complete authoring/sharing workflow are in place, digital imaging will have come a long way toward equaling the convenience of film use.

Today a consumer considering a digital camera not only has to think about a new way to take photos, but also consider the dearth of methods for easily sharing those photos.

If the TV-centric sharing methods we describe here take off as we expect, that will no longer be an issue.

Instead, digital photography will have a clear advantage over film when it comes to fast, easy, and convenient photo sharing. ■

IMMERSIVE IMAGING

AFFORDABLE CAMERA ACCESSORY

SPINSCAPE TURNS DIGICAM INTO HI-RES TOOL By Paul Worthington

Nothing captures and conveys an environment like a panoramic photo. Whether it's a grand vista outdoors or the interior of a home or business, the extended view of panoramic photography shows much more than any normal picture.

However, capturing a panorama has never been an easy task. Extreme wide-angle lenses can cause significant distortion and vignetting; single- and dual-shot optical devices add expense and difficulty, and constrain image quality: they are limited to a subset of the digital camera sensor's resolution.

Combining multiple overlapping exposures can yield very high resolution final images, but it has been an inexact and tedious process — both in the capture and the preparation. Mechanical systems for automating the capture of multiple overlapping exposures can be expensive and cumbersome. High-end devices [referred to below as digital slit cameras] in effect scan an environment one vertical line at a time while rotating 360 degrees, and capture perfect immersive images — but at a cost of tens of thousands of dollars.

Engineer and computer book author W. David Schwaderer took stock of the situation and resolved to come up with a better solution. The result is his company, SpinPic, and device, the SpinScope 1.

This automated rotating camera mount works with most any off-the-shelf digital camera. It is easy to use, very precise, and portable: it weighs approximately 5 pounds, and the base measures 6.5 inches x 7.5 inches x 2 inches, with either an 8 or 12 inch high protruding mount bracket, depending on camera needs.

The SpinScope houses an electric motor [powered by an internal rechargeable battery pack] that turns the camera at precise increments to capture overlapping exposures. Its on-board processor can automatically trigger the camera exposures through a serial cable connection. You can control the extent of the pan [from a wide view made from a few frames, to a 360-degree immersive image comprised of from two to 240 exposures and

the extent of overlap [which is primarily determined by the focal length of your camera].

With the SpinScope bracket, the camera mounts on its side, in portrait mode. This provides the greatest available up-and-down field of view for each 4:3 exposure, which maximizes the final pixel "height" of completed panoramas. [The horizontal scope is, of course, virtually unlimited due to the numerous overlapping side-to-side sequential exposures.]

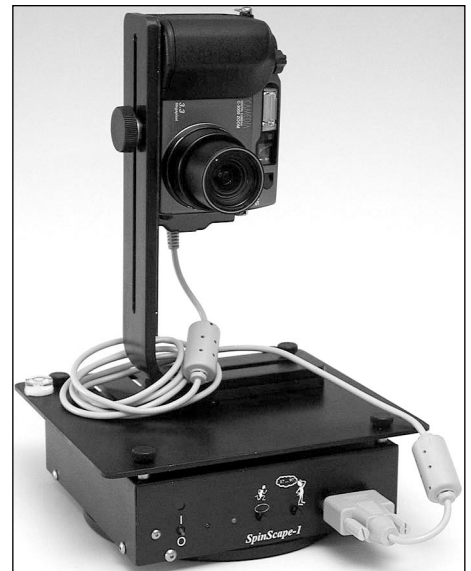
At \$1295, the SpinScope 1 is not inexpensive — but it is quite affordable when compared to other solutions that deliver comparable image quality: "slit" cameras can cost several thousand, and are also limited in their speed and applicability.

In our own use of the SpinScope 1, *Future Image* found the device to more than live up to Schwaderer's billing. While the "UI" could use some work — replacing the few simple buttons and LEDs with clearly-labeled switches or rotary dials, for example — the SpinScope was simple enough to set up and use, and let us quickly capture overlapping exposures that were precisely aligned and easily handled by SpinPic's bundled software, Smoky City Design's Panorama Factory. The resulting immersive scenes and panoramic photos were flawless.

The SpinScope can also help create object movies — combined images from all sides of an object that let the user manipulate the on-screen image as if the object were a photo-realistic 3D model. The object is set on the SpinScope's platter, and the mounted camera is turned inward to always face the object.

Given that it performs as promised, we found the harder questions to be: Is the SpinScope necessary, and for whom is it a good value? We ask this as the Panorama Factory software included with the SpinScope is so powerful that we also succeeded at making panoramas from our hand-held captures — simply spinning in place, camera cradled close, no SpinScope required. However, we doubt that most photographers can or want to take the time and care required to manually capture multiple exposures. Certainly profes-

sionals capturing many panoramic photos day after day will welcome the SpinScope's automation. And, as Schwaderer points out in the interview below, a handheld capture can work — but you don't want to wait until you've left the location and are sitting at your office PC to find out that your shots didn't work. The SpinScope, he promises, gives the maximum chance to capture precisely



SpinPic's SpinScope 1 turns a camera into an immersive capture device with precise incremental rotation.

aligned images that usually stitch together perfectly if they have the correct amount of overlap. The cost of the device, he maintains, is always cheaper than having to go back to a remote location and reshoot.

Why did you decide to make an immersive capture device?

About three years ago, when I started out, I didn't like stitching. I was in love with digital slit cameras and I was going to build one. It wasn't until I sat down and did all the cost analysis that I realized I couldn't build one and hit any kind of consumer market. They are special purchase cameras that cost a lot of money. Besides, it turned out digital slit cameras already existed that had fabulous quality.

I knew how good it could be. I knew, from seeing Michael Collette's photos, the level that could be achieved. I wanted to bring to the world something accessible and affordable, something the average person could pay for. We tried to stay away from the leading edge of technology to give way-better-than-adequate quality for 98 percent of the available customer base.

How did you start designing the SpinScope?

I was building a digital slit camera and I got way, way out of control. I realized — wait a minute — I can't sell this thing for less than \$10,000. It's just too expensive.

Next I started working with some camera manufacturers, developing software for internal use. That didn't work out for organizational reasons. We fiddled around with that for about a year.

At the beginning of 2000, I took the third step: the decision to stay outside the camera, to drive a standard camera through the serial interface.

So what I did was get rid of everything, completely resetting, and begin to figure out a precision way to use off-the-shelf cameras to do 360 degree immersive imaging.

That took about six months for a proof-of-concept prototype, and then another two months of quick iterations.

The problem the unit solves is actually much more difficult than it appears at first blush. A programmable, portable, remotely operated device in this price range is a difficult chal-

lenge. It was an iterative process, where you start off with things that you are sure will work, then you realize you are in a blind alley that won't work and have to start over.

How big was your team?

I worked with five people — a marketing advisor, a top digital image software programmer, mechanical engineer, a hardware guy, and circuit board designer. Everybody gets stock in the company. We are a classic

Does the resulting product meet your expectations?

Yes; the SpinScope approach effectively converts a \$500 camera into a \$6000-\$20,000 camera. It allows users to push one button and accurately get all the images for panoramic scenes and object movies.

The SpinScope works with virtually any camera, including film cameras. Even if the camera doesn't have a serial port, then we have what I call a "magic finger" [a mechanical option for the basic SpinScope] and it will push the shutter button for you.

Is this, to the best of your knowledge, the only device that's both an automated panhead and an object turntable?

Yes. This is it. One show. We've put a tremendous amount of thought into the design. We did everything we could to crush the cost out, the parts and manufacturing cost. Crushing the cost out keeps the street price to something that's digestible — but in addition to that, it guarantees you've got some margins to enable you to be in business.

The TV remote is an example of the cost-cutting?

Right. We control it with a \$7 Sony universal remote controller, which is a pretty cheap device — but I could let you drive right over

them away. I set out to make a camera accessory, a controller, and actually use the camera as the peripheral.

What components are in the SpinScope?

There's a 2.5 MIP processor in there, and precision positioning logic. This is the infrared input sensor, and if you lose your remote control in the field, you can partially control the SpinScope with the buttons. We have a computer circuit card in there, we have optic sensors, and it is very, very crushed as far as manufacturing cost is concerned. Rather than labels, we use cartoon figures to remind users what the buttons mean. This minimizes international language problems.

This unit is a prototype...

Well, we're trying to wear this unit out — but we can't. I've been using this unit for the better part of a year now, and every time we upgrade the firmware or do something else like that, my vice-president takes it apart and dismantles the whole thing and looks at the wear. But there is no wear, we can't seem to wear one out.

We really drive these units hard, they really earn their pay. Some days I shoot several hundred source images and spend hours at night stitching them together.

When did you ship the first finished model?

The first non-prototype model we shipped in December. So we're off in the market.



One of Schwaderer's panoramas, captured with the SpinScope 1.

this thing with a car and it wouldn't bother me because I paid \$7 for it and can go virtually anywhere in the world for a replacement.

And the primary cost saving is your use of standard digital cameras?

Yes, because with digital cameras, you cannot out-manufacture an Olympus or a Sony. Those guys are killing themselves in the competitive marketplace to produce these cameras, they're virtually giving

Your package is everything but the tripod and the camera?

Yes, we sell the SpinScope unit, vertical bracket, recharger, and TV remote control with a 90 day parts and labor guarantee. What is here is a tripod, not included; there's a quick-leveling head that we can sell for about \$30, not included in the main price. The camera is not included, and this IR controller came with the camera; and most cameras come with serial cables — we're not going to include the

cable. So all the customer needs to provide would be the camera, serial cable and tripod, and, if necessary, the quick-level device.

So where do you position yourself, in terms of the different solutions available now for the immersive photographer?

Digital slit cameras such as the Panoscan start at around \$20,000 and go on up in price. They are marvelous units, but they cost too much for a casual consumer.

What about the other camera add-on systems, such as the single-shot immersive capture optics from Remote Reality, VR Interactive, and Be Here?

As far as the one-shots go, I do have a lot of respect for them. For some reason, a lot of the manufacturers are convinced they are going to do some kind of subscriber /pay-per-image deal...

We have a system that is extremely price competitive (and it will only get more price competitive) that gives you higher resolution images than you are going to need for today's typical requirements.

But the main cost is not the equipment or the camera, the main cost is going to the top of a mountain and taking pictures; so what we give people the capability to do is overshoot what they need for today's requirements. [The combined multiple exposures made by a SpinScope yield much higher resolution images than single- and dualshot systems]. If they overshoot, they don't have to go back; they just resize the image.

Internet Pictures claim to fame is capturing 360x360 — all the way up and down. [Ipix's system uses a fish-eye lens and combines to hemispherical shots into an immersive sphere or "photo-bubble."] Can your system do a 360-degree pan at one level, and then raise up do another pan, combining both pans with multi-row stitching?

Multi-row stitching is possible...

But the software doesn't support it?

No, it doesn't yet. Multi-row stitching is more difficult than single row stitching by a long shot. One excellent multi-row stitching software package sells for about \$700 by itself.

But the problem with Ipix is resolution: if

you are going to take a round fish-eye picture that genuinely captures 180 degrees, it is not going to completely fill a rectangular sensor — you typically wind up getting less than 60 percent of the sensor resolution. Combining front and back shots, your final image rendering will have a resolution on the order of about 1.2 times that of the sensor.

My technology will give you on the order of 20 times the resolution of an Ipix capture [accounting for multiple full-resolution exposures and overlap]. So we kill 'em in resolution and we kill 'em in total cost of ownership since they levy key fees for each final image file.

But can you match them on vertical imaging, floor to ceiling.

Floor to ceiling requires a fish-eye lens which our stitcher does not support.

Can you adapt to a wider angle lens? Would the software correct the distortion for each image?

Yes, you just tell the program it's a 28mm equivalent or whatever the lens is and the software adjusts accordingly. Panorama Factory is very forgiving.

Who then do you see as your competition? Kaidan, and other makers of motorized panning tripod heads?

Well, Jim Anders [Kaidan's founder] knows about us; I've demonstrated the unit in front of Kaidan folks. Kaidan announced an auto-pan device in July that was going to be available in August, 2000; then it slipped to September, then November; then it slipped to "to be announced" status.

They did the reverse approach: they did all the intelligence in the camera — and my personal opinion is, that's not the way to do it. Other than that, I am not aware of any other similar products.

I was able to use the SpinScope right away, with great results. But the Panorama Factory also gave me good results from my hand-held images. For the hobbyist or outdoors shooter, the SpinScope seems an expensive tool for a relatively simple task.

Achieving consistent panorama shot quality is not a simple task, sorry. Because you are relatively skilled and got a few stitches to complete is no measure of what typical folks can achieve. The SpinScope makes it much, much easier for users to get consistent, high quality results. Professionals and photo enthusiasts will find the product very useful since it

BY DIFFUSING PANORAMIC AND OBJECT PHOTOGRAPHY INTO THE GENERAL MARKET, WE WILL IGNITE A PROFOUND TRANSFORMATION.

costs less than many high-end lenses and magnifies their capabilities. Also, our unit allows you to capture panoramic scenes remotely, at some distance from the unit. We have time delays you can set to move the unit up into elevated positions.

What the unit does is significantly increase the certainty of high quality results using commercial off-the-shelf cameras for both panorama and object movies. And it saves time — capture time and stitching time — not to mention the time it would take to go back out and shoot the scene again because of a hand wobble.

What's your next goal?

What you are looking at here, this is the ModelT. This is just a stopping post on the journey. And we are going to get less expensive.

We're looking for funding, and we hope we're going to get it. We tell potential investors we're not looking to change to world — we're just looking to profoundly change every important Website — sites like Ebay, Yahoo Travel, etc. That's all!

What do you see as the long-range implications of immersive imaging?

By diffusing panoramic and object photography into the general market, we will ignite a profound transformation. You will see the impact in numerous ways. This can develop into an incredible archive of society, something that was only scratched at in the early days of photography. People will be able to decide where they want to go with much greater accuracy. There will be fewer disappointing trips. People will avoid bad surprises, and less time will be wasted.

Immersive imaging is the most profound change in photography since film. ■

IMAGING NEWS AND VIEWS

TUMULTUOUS TIMES IN WEB IMAGING CONTINUE

By Paul Worthington, with Tony Henning, Joe Byrd, and Alexis Gerard

INTERNET IMAGING

PHOTOWORKS LOSES \$3M, PRESIDENT AND CEO

Online/direct mail photo services company PhotoWorks reported a net loss of \$3,046,000 for the third quarter. [Better than the \$21+M lost this time last year.] PhotoWorks had secured \$2.5 million in new financing in April. Net revenues for the third quarter were \$14,365,000, compared to \$19,862,000 for the Q3 2K.

The company [formerly known as Seattle Filmworks] also lost its CEO and President after less than a year; Howard Lee, the former senior vice president of Go.Com, had joined in the fall of 2000. Founder and Chairman Gary Christophersen is now "interim" CEO, although the company says it has "no plans to conduct a search for a new CEO."

Christophersen maintains the company will achieve "positive operating cash flow and net income in our fourth quarter of fiscal 2001." PhotoWorks says it generated \$65 million in net revenues for the 12 months ended June 30, 2001.

PHOTOPOINT DOWN FOR DAYS, TRANSFERS OWNERSHIP

As noted last month, top-ranked Web photo sharing site PhotoPoint went offline briefly as it was sold back to its original developer.

PhotoPoint.com had been legally owned and managed by San Francisco-based PhotoPoint Corp. since 1999, but it was still maintained by Pantellic Software, which initially created the site in 1998.

On July 17, Halifax, Nova Scotia-based Pantellic re-acquired rights to the site, buying PhotoPoint from Sherwood Partners, which had been appointed to sell certain assets of the company. PhotoPoint Corp., which had received many millions from investors such as SoftBank and Sun, still owns its subsidiary event photography business, JoePix. PhotoPoint's San Francisco office is reportedly closed.

During the transition, the site was down for a number of days, panicking many users who had no access to their digital photos. Pantellic CEO Dale Gass has since sent an email to the site's members, apologizing for the down time and promising the site's continued health, as well as extending all existing paying accounts by a period of two months. The company says 1.6 million members have stored over 40 million photos on the site.

Pantellic Software reportedly said that without the overhead of the San Francisco-based spin-off corporation, the site almost pays for itself and the company may even earn a profit soon.

PhotoPoint began charging for online photography services in April. In August, the struggling dotcom announced an interesting way to make revenue: PhotoPoint teamed with NextCard Visa to let new credit card customers have a photo of their own choosing emblazoned on the plastic.

PHOTOACCESS SIGNS 101-STORE CHAIN

PhotoAccess says it has signed Groupe Dumoulin, a Canadian electronics and computer retailer with 101 stores, to its photo management, storage, and photofinishing solutions eCommerce services. The www.dumoulin.com-branded site will be complemented with in-store photo pickup. PhotoAccess has already secured partnerships with JVCAmericas, Naniwa, Digital Dream, USA Drug, and Fruth Pharmacy.

PHOTOCHANNEL ACTIVATES NETWORK

PhotoChannel Networks reports it is still struggling to meet its financial commitments. The company had previously curtailed many of its ambitious plans, publicized on a regular basis over the last year. PhotoChannel announced it had raised an additional \$3,000,000 Canadian through a "non-brokered private placement of 30 billion special warrants."

Despite financial troubles, the company says it has now officially "activated" its actual network, an "open-standard network

designed to connect all brands and models of digital photofinishing equipment with data lines, encryption technology, private-label websites, and in-store hardware and software." PhotoChannel reports there are currently "several retail locations" with more "scheduled for activation in the next few months." The company says it will become a "technology producer and broker of services, connecting retail member locations together."

PIXAMI ADDS TO ITS PICTURE TOOLS

Pixami says it's upgraded its infrastructure technology for online photo sites. New features of Pixami 2.0 include a complete Shopping Cart and back-end administration system, as well as Photo Calendars, Photo Album additions such as clip art and 'thought balloons,' image enhancement tools, and an improved user interface and workflow, the company says.

Pixami says its upgrade was based on partner feedback, and emphasizes "revenue-generation, quick site integration, stickiness, and ease-of-use."

PRIMESHOT CLOSES DOORS

Professional Web photo services provider PrimeShot has shut down, after it failed to win additional funding. We reported earlier it had filed for bankruptcy protection, and are now told the company's founders are considering selling its assets.

MYSTIC MARKETS ONLINE PHOTOFINISHING

Direct mail photofinisher Mystic Color Lab says it is "in discussion" with several companies to provide branded photo processing services to their employees and customers. Says sales and marketing director Colleen Garringer in a statement, "Even non-traditional companies, like fast-food chains, are considering adding film processing and online photo centers to their operations to entice customers and build brand loyalty." Mystic offers film scanning, photo CD creation, and the online Print@Mystic service.

UNIVERSAL SIGNS FOR COMEYO'S BETTER-QUALITY WEB VIDEO

Digital video developer Cameo Technologies says Universal Pictures is the first major customer for its CameoCAST consumer network.

Trailers from upcoming Universal film releases and pay-per-view events will be delivered to CameoCAST users, the company says. The system stores broadcast-quality digital video on users' own PC hard drives, avoiding the bandwidth and quality issues of streaming media.

As hard drives get bigger and cheaper while bandwidth remains limited to the dial-up bottleneck for most home users, we believe this is a strong short-term solution for promotional use of digital video. Streaming techniques protect the assets of the content owners, but harshly limit the viewing experience of the user.

Speaking of large hard drives: it's no surprise that Cameo was formed last year by drive maker Western Digital.

WAP 2.0 SPECS RELEASED FOR PUBLIC REVIEW

The much-maligned WAP (Wireless Application Protocol) got an upgrade with the release of the WAP 2.0 specifications by the WAP Forum. To no one's particular surprise, Ericsson, Nokia, and Motorola — founders of the WAP Forum — immediately announced their support for the new specs. With this new version, the Forum moves WAP closer to convergence with the wired Web by building on the latest Internet standards developed by the W3C and IETF — XHTML, CSS, TCP/IP, HTTP, and TLS.

INTERNET IMAGING BRIEFS

With its automatically updated screen-saver that can increase photo-related commerce, **Eyetime Media's** client list has recently expanded to include 30 major league baseball teams through their affiliation with MLB.com, which will let Eyetime deliver baseball team action photos immediately after a game ends. Eyetime has also signed an agreement with NASCAR.com to deliver photos of drivers crossing the finish line right after the race.

Phobo.com, the company operating a number of e-commerce sites including RitzCamera.com and BoatersWorld.com, has changed its

KODAK, AOL IMPROVE "YOU'VE GOT PICTURES"

America Online and Kodak are promoting a new version of their joint online photo service, "You've Got Pictures." The important changes are in the areas of packaging [film envelopes no longer present a bewildering array of check boxes and features to choose from] and the pricing: a flat \$8.99 in most cases covers prints and online photos, and for no extra cost customers can now leave the images on the site for as long as they are active.

Equally important: AOL members can now easily upload pictures from digital cameras and scanners. [The absence of this capability had been our main criticism of the system at introduction.] AOL members will access the Print@Kodak service for options such as posters, mugs, and more. The revised service also sports an overall face-lift, based on consumer feedback, intended to increase ease of use and customer convenience.

name to Ritz Interactive.

Online photofinishing website **FotoTime** will no longer offer free photo sharing; members will now be charged \$23 a year for 250MB of online storage. The company says merchandise sales have not met storage costs. FotoTime launched last summer.

Corbis and **GignoSystem** Japan have launched a new website offering subscribers to NTT DoCoMo's wireless i-mode service the ability to customize their phones with an exclusive selection of Corbis images.

Two Web imaging companies, **EarthScan Network** and **i-cubed**, have teamed to sell online a Landsat 7-based 15-meter color mosaic of the lower 48 United States. The ImageMap USA product is available at www.i3.com or EarthScan.com.

Neofoto.com, a new stock photo site founded by a professional photographer, is offering pro shooters what may be a more profitable way to sell their images: an "unheard of favorable 70/30 split of the revenues, rather than the traditional 50/50 found at most stock agencies," according to founder Michael La Riche.

Shop With Color is the combination of **Pantone's** "TheRightColor" solutions and **TrueSpectra's** ImageTone dynamic imaging software. The companies say the initiative is designed to enable businesses and consumers to search for products by color on the Web.

OEM manufacturer **Xirlink's** new Veo brand will bundle **SpotLife's** personal Web video services with its Stingray Internet PC camera, letting its customers upload and 'broadcast' their clips from the spotlife.com Internet video site.

DIGITAL CAMERAS

FDA APPROVES PILL-SIZED CAM

Reuters reports that a pill-sized camera that takes pictures as it moves down the digestive system has been approved by the U.S. Food and Drug Administration.

The disposable camera is made by Given Imaging of Israel, and is already on the market in Europe. Once swallowed, the device shines a light along the 20-foot long small intestine, taking two pictures per second and transmitting the images via radio waves.

HITACHI DV CAM STORES ON DVD

Hitachi America is now directly marketing from its website its latest motion/still combo cam, the \$1,995 DZ-MV100ADO. The camera can hold two hours of full motion MPEG2 video and nearly 2,000 one megapixel [1280 x 960] still images on optical discs. It has a 12x optical zoom lens, a 3.5-inch LCD, and weighs 2.1 pounds.

AGFA REPORTED TO CLOSE CAMERA OPERATIONS

British news sources indicate that Agfa will no longer market digital cameras or consumer-range scanners. Widely discussed intentions to sell the consumer imaging division never reached fruition. Future Image's calls to our previous camera contacts revealed they are no longer with the company; a spokesman's answers amounted to "I don't know."

Despite pioneering a number of worthwhile innovations in its consumer digital cameras — including the rotating lens/flash unit Nikon adopted for its 900 series, and the clickable thumbwheel — Agfa never established itself among the leaders in the sector. This move, if confirmed, indicates the company may be focusing its resources on the higher end, graphic arts oriented business, where it has more cards to play.

CAMERA BRIEFS

Internet Pictures is selling an iPix Camera Kit based on the Nikon Coolpix 995 digital camera. The \$2,099 kit includes the camera, a 48MB CompactFlash card, Bogen tripod, a camera-mount rotator, software, 12 "image keys" for saving completed immersive images, a carrying case for the entire kit, and a 180 degree fisheye lens.

Photographic VR hardware manufacturer **Kaidan** announced a panoramic tripod head for both Nikon's Coolpix 880 and 995 digital cameras. Kaidan's KiWi 880 and 995 tripod heads should be available by September for \$199.

Nikon is promoting its Coolpix 775 with a 12-city tour that starts in New York City and ends in San Francisco. The tour will take 775 hours, Nikon says. According to Nikon, at 6.5 ounces, the

Coolpix 775 is the world's lightest 3x optical zoom camera, and features one-touch upload to the Web.

Polaroid introduced yet another VGA entry-level digital camera: The PhotoMAX FUN! 620 is \$69 for 640 X 480 resolution, and has 1MB of internal memory without removable media. Regardless of the company's well chronicled travails, this product fits well within the company's core strengths: Branding and shelf presence in mass-market retailers.

According to Reuters, Taiwan's "quasi-governmental" **Institute for Information Industry** reports that the country's production of digital cameras will rise 86 percent this year to 10.5 million units. Taiwan already manufactures 30 percent of worldwide digital camera units, with most of that volume at the low end.

COMPONENTS & ARCHITECTURES**SOUND VISION OFFERS PC-FREE DIGITAL PHOTOGRAPHY DESIGN**

Sound Vision is offering OEMs a design kit for a digital photography system that doesn't force consumers to use a PC, by packaging a VGA-resolution camera and a TV-connected card reader/floppy disk drive.

Sound Vision's package is based on its V1 VGA dual-mode digital camera [incorporating Sound Vision's own Clarity programmable ASIC and an Agilent CMOS sensor] with a docking station that has a 3.5-inch floppy disk drive. The dock connects to a TV, so users can view images directly from the docked camera. The dock's menu, viewed on the TV, lets users navigate among images or choose an automatic slide show, rotate images 90 degrees, and download shots

MOTION/STILL CAMERAS FROM MATSUSHITA, CANON**MATSUSHITA, LEICA COME TOGETHER FOR CAMERA THAT COMES APART**

Matsushita and Leica say they will partner to develop and market digital cameras, marrying the Japanese electronic giant's audiovisual technology and the German camera maker's optical technology. New cameras will come out under the Panasonic and Leica brands by autumn. [Previously, Leica had labeled models manufactured by Fuji.]

Matsushita also announced a unique new camcorder that features a Leica 10x optical lens and a 1MP CCD. The Panasonic NV-EX21



MiniDV Camcorder is a "combo" still and video unit that is the first to break apart into its separate functions: in video mode, the flash can be detached; in still mode, the cassette recorder comes off and photos are captured to an SD Memory Card. The camera also features Bluetooth wireless image transfer.

The DV camcorder will sell in Japan next month and in the U.S. next spring, for approximately \$1,657.

Reuters reports that half of the 12 million video cameras sold around the world last year were digital. As we predicted early last year, combo-cams are a growing field [see following story on Canon's latest.] Today, however, most digital camcorders on the

market continue to capture sub-VGA resolution stills — and even multi-megapixel still cameras capture video that is far below TV quality. We expect that this dichotomy will not continue for many more years, and the future combo units will provide consumers with more than adequate still and motion capture capabilities.

CANON'S 1MP COMBO CAM

Canon has revamped its Optura digital camcorder: the new 100 MC model has a 1.3MP CCD and can capture 1280 x 960 stills. Most digital camcorders capture sub-VGA resolution stills.

While the Optura's video resolution is unchanged [standard DV is about the equivalent of VGA] the Progressive Photo mode uses a mechanical shutter for greater detail, and records JPEGs to a MultiMediaCard or Secure Digital Card. The camcorder comes with one 8MB MMC card. The \$1,899 camcorder, due in September, offers both fully automatic and manual control over focus, exposure, white balance, and shutter speed.

The Optura has a 10x zoom lens [the 35mm photo lens equivalent of 48–480mm] with optical image stabilization that operates in both video and photo modes; an auto pop-up flash; an IEEE 1394/Firewire jack; and a 2.5-inch LCD that swivels and flips for optimum viewing. For single-hand operation, the new Optura has a vertical orientation similar to the smaller Elura.



from the camera to floppy storage. None of the functions requires a PC. The Sound Vision V1 dual-mode (digital still and USB video) digital camera has 8MB SDRAM to store up to 130 images.

Sound Vision says its reference design is available to manufacturers now, and adds that Hong Kong-based World Wide Licenses Ltd. will market a finished product, under the model name TV Cam, in the fourth quarter for about \$169.

COMPONENTS BRIEFS

Samsung will build slots for Memory Stick removable storage media into its PCs later this year, and in consumer products such as camcorders, DVD players, mobile phones, PDAs, and TVs in 2002. Samsung says it is using Memory Stick for its security, expansion — and Sony's marketing strengths. Sony says its Memory Stick format is currently supported by 167 companies.

Memory Stick will also be cheaper in the future: **Sony** has lowered the price of its 8MB, 16MB, 32MB, 64MB, and 128MB capacities to \$25, \$35, \$50, \$80, and \$150, respectively.

Texas Instruments says its latest digital imaging DSP's integration of various functions improves battery life up to 70 percent. With USB connectivity, 10-bit ADC, and storage card interfaces, the TMS320C5509 is now sampling. Full production begins in the first quarter of 2002 at a price of \$18.

Toshiba says it will soon offer a 128MB

Secure Digital Memory Card. The SD-M1280 is comprised of two 512-megabit NAND flash memory devices, made with Toshiba's 0.16-micron process technology. Samples are now priced at \$149; retail sales are expected by the end of the year.

VISUAL ASSET MANAGEMENT

San Francisco-based **Alchemedia** says it has joined the Oracle Portal Partner Initiative (OPPI) and will offer its encryption-based security solution to other members of OPPI, as well as customers using portal technology in Oracle9i Application Server (Oracle9iAS).

Allwall.com, an online art retailer, has changed its name to Art.com, following its acquisition in May of the Art.com domain name from Getty Images.

Asset management developer **Artesia Technologies** announced a definitive agreement to acquire the assets of TeamToolz, a provider of Web-based marketing and brand management software.

Banta says the latest release of its B-media digital content management software can now be installed on a total Windows NT platform, resulting in an overall reduction in the cost of a B-media installation.

Creatas LLC purchased image-licensor **PictureQuest** from eMotion. PictureQuest is a distributor of royalty-free and rights-protected photography, representing 50 stock

photography agencies. eMotion will support the technology and continue hosting the site.

IBM announced a new e-commerce offering that allows media companies to sell and deliver digital assets directly to businesses and consumers via the Internet. The WebSphere Commerce Suite for Digital Media is packaged with consulting services to help companies quickly establish an e-commerce site for digital media, and the optional Electronic Media Management System software addresses digital rights management and protection.

INDUSTRY UPDATES

DIG AND PIMA COMPLETE MERGER

What do you get when you add DIG to PIMA? "I3A."

The "International Imaging Industry Association" is the new moniker for the world's largest imaging industry manufacturers' organization, formed by the now-completed merger of the Digital Imaging Group and the Photographic and Imaging Manufacturers Association — the leading associations in the digital and photographic imaging industries, respectively. The I3A, which operates under a not-for-profit status, now claims more than ninety member companies. I3A is led by co-executive directors Lisa Walker and Michael Nier, both leaders of the previous organizations. I3A says the

EXECUTIVE CAREER MOVES

Shutterfly promoted two of its founders: **Dan Baum** was named Executive Vice President of Operations; **Eva Manolis** is now Executive Vice President of Product and Services Strategy. The company also added two new executives: **Andy Young** is the new Chief Marketing Officer. Young had been Marketing VP for Questrus, and a Senior Vice President of Marketing for Mattel Interactive. **Jeannine Smith** is Chief Engineering Officer, having come from Silicon Graphics and Alias|Wavefront.

Kodak President and COO **Patricia F. Russo** has been elected to the company's board of directors. Also, **Eric G. Rodli**, president of the Entertainment Imaging

division, was named a company senior vice president, replacing the retiring Joerg D. Agin. **David G. Monderer** was also elected vice president.

Gretag Imaging named **Patrick W. Jung** as CEO. He has been with the company since 1988.

Ted de Buhr steps up as **Wolf Camera's** president and chief operating officer. A member of Wolf's senior management team since 1998, he replaces founder Chuck Wolf, who continues as chairman and CEO.

TrueSpectra named **Julie Harrington** as acting COO.

MediaBin (formerly Iterated Systems) announced that **David P. Moran** will succeed John C. Bacon as president and chief executive officer of the company effective September 1. Moran currently serves as chief operating officer for Eftia OSS Solutions. Bacon, president and chief executive officer since February 1998, will become chairman of the board.

PhotoChannel Networks named **Peter D. Fitzgerald** to its board of directors. Fitzgerald was CEO of Gretag Imaging until January 2001, and, prior to that, CEO of Kodak's photo processing subsidiary Qualex.

new association "will be committed to developing and promoting the adoption of open industry standards, and to providing a voice for the industry."

FIR Executive Editor Alexis Gerard, who headed the DIG as President and Executive Director in its first year, concurs with positive industry reactions to the merger. "Overcoming barriers to market growth remains a primary objective for the digital imaging industry. That requires cooperation among competitors, and a vital, effective structure for that cooperation is needed in order to achieve industry-wide participation. The merger of DIG and PIMA creates a stronger venue than either could achieve on its own. The DIG contributes unique expertise in the technical and marketing issues related to digital imaging, while PIMA brings scale, a long history of successful operation, and the involvement of traditional photo players in the transition to digital. There's a lot of work to be done, but this organization appears well equipped for success."

PC-EPHONE LAUNCHES

Wireless imaging is one of the functions of the upcoming PC-EPhone — a true Swiss Army Knife appliance that combines a handheld computer running Windows CE, a 256-color VGA touch screen, 22MB ROM / 32 MB RAM, IrDA & Bluetooth connectivity, and a

built-in CDMA wireless phone. The unit plays MP3 sound and MPEG video files, and has a built-in microphone and speakers. It also features a rechargeable lithium-ion battery and a Type II CompactFlash slot that will accept, among other things, CF cards that connect to CDPD, CDMA, and GSM wireless data networks. The PC-EPhone operates as a phone either through a wired or wireless earbud, or through a wireless handset that doubles as a stylus for the touch screen.

Whew! All this in a form factor five inches high (including built-in antenna), four inches wide, and less than one inch thick (127 x 102 x 22 mm), weighing about 10.5 ounces (299 g).

The device was developed in Korea as the "Cybird" by Cyberbank and is manufactured there by Samsung. Units will begin shipping in 60–90 days for \$999. Verizon is expected to be the first carrier to "certify" the device for use with its CDMA voice/data network.

SHARP TV COMES WITH CAMERA MEDIA SLOT

The upcoming flat-panel TVs from Sharp will have a PC card slot for reading digital camera storage cards [and presumably come with adapters for various card types...] The LCD TVs will be able to display digital photos without additional hardware. Reuters reports that Sharp, Japan's biggest maker of LCDs,

aims to stop using conventional picture tubes in any of its TVs by 2005. The 13-, 15-, and 20-inch screens are priced from around \$830 to \$1,850.

LARGE, CHEAP LCDS

Large LCD monitors were ultra-expensive items just a year or so ago. Now ViewSonic is selling its slim VE170m 17-inch LCD display for \$899. The display has a contrast ratio of 300:1 and supports a 1280 x 1024 resolution. It even has speakers. ViewSonic says it uses half the energy and desk space of a standard tube-based monitor.

VIEWSONIC ENTERS MOBILE COMPUTING MARKET

ViewSonic unveiled its ViewPad 100 SuperPDA and the ViewPad 1000 tablet PC, characterizing them as "intelligent display devices." The ViewPad 1000 is particularly interesting as it features built-in wireless Ethernet (802.11b), a PC Card expansion slot for wireless WAN support, and a pivoting VGA CCD digital camera mounted on the top frame. The unit has an Intel Celeron 800 MHz processor, Windows 2000, 128MB SDRAM, and 6GB hard drive. The tablet-shaped PC has a 10.4" 800 x 600 touch screen that can pivot to landscape or portrait mode, and supports USB, or wireless keyboards as well as handwriting recognition.

MICROSOFT RESPONDS TO KODAK'S WINDOWS XP IMAGING CHARGES

[Please see page 2. This correspondence with Microsoft Technical Evangelist Vicki Milton took place before the Kodak / Microsoft settlement.]

Are Microsoft XP's photo functions strongly linked to their PTP driver stack?

PTP is not explicitly linked to any particular photo function in Windows XP. The PTP standard enables the recipient device (PC) to intelligently communicate with the enabled device (Camera) without requiring the installation of additional drivers. Microsoft created a WIA PTP driver based on the standard.

If the vendor wants to provide value add in their device and expose that value in a vendor-proprietary manner, Microsoft advises the IHV to either not expose their camera as a PTP generic device by using the generic PTP class ID or to provide an application that specifically talks to the camera in a vendor specific manner via the Windows WIA PTP driver. This solution is documented in the Windows Platform Software Development Kit.

Does Microsoft makes it difficult to not use the Microsoft functions if you use the driver stack?

Microsoft does not make this process difficult whatsoever. On the contrary, we provide extensive development tools and vendor

support to facilitate developing WIA applications for the Windows platform.

Why does installing a driver trigger warning boxes?

The warnings have been designed to get the users' attention so they understand... the potential consequences of installing unsigned (and thus potentially not properly tested) drivers. Customers have given us very positive feedback on driver signing. They also believe driver signing will continue to help improve driver quality.

Did Microsoft tell Kodak it won't "sign" its PTP driver?

Microsoft has not received any camera submissions from Kodak, so there has been no denial of driver signing to Kodak. Microsoft will sign any device/driver combination that meets our minimum quality requirements.

Microsoft will not sign a proprietary driver that 1) replaces an operating system component or 2) reduces or eliminates functionality of other installed devices. An "alternative" PTP driver stack that installs on the generic PTP class ID would fail for this reason. However, Kodak can submit a driver stack for their PTP camera that works with their vendor proprietary device ID and would then not fail for replacing an operating system component.

HARDWARE BRIEFS

Hewlett-Packard's latest photo printer, the HP Deskjet 940, is a \$149 unit with 2400 x 1200 photo-quality resolution. It prints 10 color pages per minute.

Epson reduced the price of its Stylus Photo 780 inkjet printer to \$99. The unit, formerly \$149, supports Epson's PRINT Image Matching system for optimal color from digital cameras. It has a 2880 x 720 resolution and a six-color photo ink system.

Epson also continues to offer high-resolution scanners at consumer-level prices. The \$399 Perfection 2450 Photo, shipping in October, uses a half-stepping motor to provide a 2400 x 4800 resolution. The Perfection 1650, with a 1600 x 3200 resolution, will sell for \$199; the Perfection 1250 has a 1200 x 2400 resolution, and will sell for \$129. Both models, due in September, have slightly higher priced versions with 35mm slide adapters for scanning negatives and slides. The adapter comes standard on the 2450 Photo unit.

Gretag says its **digital4master** kit lets owners of analog minilabs work with digital media [including SmartMedia, Compact Flash, PC cards, Memory Stick, and CD-ROM], perform digital image correction and

composition, and produce digital products such as photo CDs. The kit includes an Ethernet card and cable and a 13-inch touchscreen. Supported minilabs include the Master Lab, Performa Entro, Master Flex A, and Master Nova series. Pricing and availability were not announced.

Howtek says its FlashFunnel lets photo retailers provide digital camera users with CD-based photo archiving service. The turnkey unit costs less than \$3,000 and includes a card reader and flat panel display. A software product is less than \$1,000.

FINANCIAL BRIEFS

Kodak reported a decline in second-quarter profits; this quarter's \$325 million is down 37 percent from the \$513 million earned in the same period a year ago. Revenues fell 4 percent to \$3.59 billion, down from \$3.749 billion in 2Q 2K. CEO Dan Carp says "Kodak intends to take full advantage of the opportunities created by the infoimaging industry, from OLED displays and digital cameras to digital radiography and aerial imagery."

Lexar Media will reportedly soon cut its employee count by 27 percent. Also, the Fremont, CA-based company replaced presi-

dent and CEO John Reimer with former COO Eric Stang; Reimer will serve as chairman of the board.

Seattle, WA-based **PhotoWorks** was told it doesn't have enough tangible assets to remain listed on the NASDAQ exchange, according to CBS MarketWatch. PhotoWorks has requested a review hearing, saying it expects to be profitable and cash positive in its fourth quarter.

Internet Pictures will appeal its own delisting, first ordered in June due to its minimum bid price being lower than required for continued listing.

To the surprise of no one, **Polaroid** reported a net loss of \$109.9 million in its 2Q 01 financial results. That compares to a profit of \$26.6 million for the same period last year. Revenues this quarter fell 31 percent to \$333.5 million; Polaroid generated \$485.6 million in 2Q 2K.

As it reorganizes under bankruptcy protection, **Wolf Camera** will close 118 stores — nearly 22 percent of its total locations in more than 20 states. As reported here in June, Wolf Camera filed a petition for reorganization under Chapter 11 of the U.S. Bankruptcy Code.

THE FUTURE IMAGE REPORT

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Gerard is widely viewed as the foremost independent expert on the digital imaging industry. A former computer industry executive with a background in professional photography, he focuses particularly on digital cameras and on imaging systems issues. He chairs the annual Photography in the Digital Age conference, and consults privately to leading companies in the field.



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Future Image Inc., also provides consulting services and research reports on numerous aspects of the digital imaging industry. For more information, see WWW.FUTUREIMAGE.COM

IMAGING NEWS AND VIEWS, CONTINUED

ACD PROFITS; BUNDLES, LICENSES

British Columbia-based ACD Systems continues to widely propagate its imaging software: • The ACDS_{ee} tool for viewing, browsing, managing, and sharing images, will be bundled worldwide with Hewlett-Packard's HP Scanjet color scanners and HP Photo Scanner 1000. • Sony Pictures Digital Entertainment's online gaming division licensed ACD's Digital Imaging Plug-In Software Development Kit to view DirectDraw Texture Surface image files within ACDS_{ee}. • ACDS_{ee} Mobile for Palm OS lets users better view images on their PDAs. The \$19 software converts nine image types, sorts files for browsing by name, date and other parameters, and displays images either at a size appropriate for the PDA or at full resolution. • Finally, ArtToday.com, an online subscription service for clip art, Web graphics, photos, and fonts, will be offering ACDS_{ee} and PicaView software to its 2.5 million members at special prices.

The regularly-announced deals and partnerships seem to pay off: ACD says it earned 54 percent more in Q1 02 than the previous year, and its sales are up 67 percent.

SOFTWARE BRIEFS

Andromeda says its latest Photoshop-compatible plug-in provides a "unique process for simulating the look of steel etching." The EtchTone Filter works on a color or grayscale illustration or photo and, the company says, combines an etch pattern with the original image to create a continuous tone screen that results in a classic old printing look, which softens the harshness of solid black and white line screens. The filter is \$89.

Callisto says its software for using photos in slideshows and screen savers to share with friends and family now supports MP3 music files. PhotoParade is \$19.

Corel launched its new "procreate" line of software for creative professionals with the latest version of Painter, the "NaturalMedia"

painting and image editing program. Additions to Painter 7 include a new watercolor technology that "is so realistic paint colors drip and blend together," the company says, letting users control the wetness and evaporation rate of the paint. Also, a Liquid Ink layer mimics the viscosity of thick ink or paint. The \$499 Mac and Windows software ships next month.

Ontario, Canada-based Corel also acquired longtime PC graphics software developer Micrografx, of Richardson, TX.

Santa Clara, CA-based **E-Book Systems** says the latest version of FlipAlbum, its Windows-only picture album with the patented 3D page-flipping interface, will now allow multiple photos and annotations on each page.

Scene7's imaging software suite lets companies customize, manage, and display images, whether online, in store, or in print. Tools included can change the color, material, patterns, trim, textures, surfaces, and context of an item in an image; they also provide zooming with any high resolution image file type, and "3D" object movies. Pricing and availability were not announced.

Netherlands-based **Shortcut** is now offering a Macintosh version of its image scaling software, S-Spline. The company says its patented enlarging algorithm provides better-quality enlarged images than standard bicubic techniques available in many image editing programs. The software is \$61; a free download demo is on the company's website.

TawbaWare says its \$15 DOS and Windows PixelZap imaging utility removes 'hot pixels' from digital camera images caused by 'noisy' long-exposures and/or a defective or aging CCDs. The hot pixel problem can be caused by dark current noise. The software examines the image in 2x2 pixel clusters, and re-saves without any additional image quality loss due to JPEG compression.

UPCOMING IN THE FUTURE IMAGE REPORT:

- **Image Serving** — Many companies are claiming improved transmission and display of photos on the Web. Does it really translate into improved sales? We present an excerpt from our upcoming research report.
- **Web Photo Services 2001** — An advance look at our upcoming chronicle of the Web photo sharing and photofinishing market, with exclusive interviews with top industry executives.
- **Digital Cameras** — An examination of the most important upcoming digital camera technologies and marketing initiatives, with interviews with top manufacturers.