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Once again it's time for the Postal Rate Commission to schedule a slate of public hearings on the possibility of raising postage rates in the United States. The last postage rate hike was a few years ago, and nobody I've talked with expects 2005 to come and go without a substantial increase being scheduled.

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**Michael H. Bruno, February 1911 – January 2005 19**

By Frank Romano

Mike Bruno died peacefully in his sleep at the age of 93. He is survived by his wife Gilda, his son, J. Michael, and daughter, Donna Eltoft. Mike will always be considered the father of the American printing industry.

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**Photography**

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# Photokina 2004: Better, Smaller, More Refined

BY BERND ZIPPER

**It's hard to believe, but digital publishing has become a growth market for Photokina. Many of the manufacturers presenting printers, scanners, cameras and projectors at the show are integrating XML and PDF into their solutions. Even JDF made an appearance. But invariably, there was a strong focus on digital media. The boundaries between conventional photo reproduction — until recently the exclusive province of photo laboratories — and the new digital world of printing has blurred considerably. Correspondent Bernd Zipper summarizes the most important news.**

**T**he photo industry mega-event held in Cologne, Germany, last fall served as a showcase for trends in image editing and photography. The technology revolutions, however, appear to have subsided, at least for now.

“We are now witnessing the normalization of digital photography in every sector. Digital photography can now be implemented in any area without exception,” said Martin Knapp, CEO of the German Association for Digital Photography. The traditional film industry, meanwhile, is in a crisis, since film is seldom required anymore.

With 1,589 exhibitors from 50 countries, Photokina, like Drupa, has become the signature event of its industry. Major manufacturers Agfa, Epson, HP, Kodak, Fujifilm, Olympus, Nikon, Canon, Sony, Sinar and Leica all demonstrated their latest developments, with a focus on digital products, to 160,000 visitors.

With photography increasingly becoming a “lifestyle activity,” even industry giant Microsoft felt compelled to attend Photokina.

“We are confident that a collaboration with the industry will give business in the areas of consumer and professional imaging a push,” said Josh Weissberg, group manager of Windows Digital Media Marketing. Microsoft showed solutions for wirelessly connecting cameras to personal computers and demonstrated online printing at the show with a service that will make it easier for users to obtain paper prints of their digital photos.

Many digital camera manufacturers are also taking a consumer approach to photography, which means that the physical design of the camera is becoming increasingly important. Each camera manufacturer is

featuring at least one “design camera” that looks cool and is very handy.

## Camera Cell Phones Grow Up

Cell phone giant Nokia, the worldwide market leader in mobile telephony, also hopes to cash in on the consumer trend. For the first time, the Finnish manufacturer is offering 1.23-megapixel resolution in its sleek new device, the Nokia 6630. Featuring a resolution of 1,280 by 960 pixels and an image sequence function for six exposures in two seconds, the Nokia 6630 sets the standard for the industry. Nokia's business devices, the 6670 and 7610, also feature a 1-megapixel camera. All three devices include a 64MB RS-MMC memory card and come with the Symbian OS, an operating system that allows customers to install external applications as well.

Nokia also presented its new Nokia Communicator for business customers (available in the spring of 2005). Nokia's models 95100 and 93100, which run on the new Symbian OS 7.0, not only display PDFs, but also allow users to generate PDFs with the PDF-Plus tool.

Anticipating that some customers might want to print the pictures they take on their camera phones, Nokia, along with HP and Kodak, showed a new miniphoto printer, which allows the user to transmit data via a Bluetooth wireless connection from the cell phone directly to the printer for paper prints.

At the moment, Nokia's new cameras are of scant interest to the professional user, but the jump to 2 megapixels is already inevitable. A 2-megapixel camera phone from Mitsubishi and the L5100 from LG hit European stores this Christmas, and 3-megapixel camera phones are already available in Asia. In South Korea, Samsung has set the standard with a 3-

megapixel camera phone with Pentax optics. At that point, professional photo prints start to make sense.

Even though Nokia wholeheartedly praises the new devices as the right step toward the “mobile office,” a lot of work remains to be done for camera phones to be taken seriously by professionals. Nevertheless, thanks to their improved LCD resolution and better ergonomics, as well as a better graphical user interface, the new devices are a lot of fun. More than 70 million camera phones were sold worldwide in 2003, proving that this market is expanding rapidly. We will just have to get used to the thought of a picture-taking cell phone or a telephoning camera.

### Film Crisis

The push toward digitalization has put traditional film market leaders in a bind. In Germany, film camera sales dwindled from about 4 million in 2000 to just 1.36 million in 2003. Meanwhile, sales of digital cameras in Germany have skyrocketed from 580,000 devices sold in 2000 to almost 5 million in 2003, with an industry target in Germany of more than 7 million devices in 2004.

It will be interesting to watch leaders such as Kodak, Fujifilm and Agfa deal with this dilemma. Fujifilm is massively expanding its digital camera and storage media businesses, as well as its “mini-labs” (the photoprint devices for photo laboratories). Meanwhile, Kodak and Agfa are clearly focusing their attention on the “photo-kiosk” business. A digital camera user can insert a storage medium directly at the point-of-sale, such as the local supermarket, into a terminal from Kodak, Agfa or Fujifilm and order photo prints.

Agfa, Fujifilm and Kodak are expanding their services and developing their own networks in the photokiosk sector, including online services. Numerous smaller sellers are also offering hardware. Agfa recently spun out its film-and-photo business as a provider of “digital film” (meaning storage media) under the name AgfaPhoto. Particular noteworthy is Agfa’s Agfanet 3.0 ecommerce service, which provides local dealers with service and online and marketing tools. Agfa also introduced two products for online finishing: netlab.1 allrounder and netlab.2plus. Based on the digital technology of the digital minilabs d-lab.1 allrounder and d-lab.2plus, the devices allow from 900 to 1,700 digital images to be printed onto photo paper — a highly productive solution for processing online orders on high-quality photo paper.

Using this tool, photo dealers will be able to process mixed orders with different formats. Agfa netlab.1 allrounder is equipped with two paper depositories and a new sorter, which further simplifies the handling of mixed-format orders. Agfa netlab.2plus can produce prints up to 30 cm by 45 cm and has a new sorter, which can accommodate prints up to 25 cm by 30 cm.

### Nexpress at Photokina?

Kodak had a new look at Photokina and introduced products in consumer imaging, large format and digital printing. The audience reacted to the presentation of the Nexpress 2100 with partial amazement. Nexpress demonstrated some applications for photo books and postcards with a glossing effect and special finish in extremely high quality.

“Using our unique imaging solutions enabled by a fifth imaging unit on the Kodak NexPress 2100 production color press, we are running live production of photo-rich print applications, such as photo books,

*We will just have to get used to the thought of a picture-taking cell phone or a telephoning camera.*

postcards, calendars and posters,” said Paul Willems, VP and general manager of EAME NexPress. “When people see the high-gloss prints produced by the Kodak NexPress NexGlosser glossing unit, they are surprised when they learn that it is digital printing on standard offset paper,” he said.

Also new from Kodak is the ImageLink printing system, which further simplifies the issuance of digital photos for home users. All future digital cameras from Eastman Kodak, Konica Minolta, Nikon, Olympus, Pentax, Ricoh and Sanyo will be able to print digital photos at the push of a button. Small-format printers integrated with the ImageLink printing system, such as the new Kodak EasyShare printing stations, will be directly connected to these cameras by a new 26-pole plug for instant printing. The first printers supporting this new approach toward an industry standard plug and input/output protocol can be expected early this year.

Another new announcement was the linking of Adobe Photoshop Services with Kodak’s online photo



The S3Pro is the new flagship from Fujifilm. Fujifilm took a Nikon body and added their own technology.

The Pentax ist DS is one of the most affordable DSLR on the market — not overloaded with hundreds of features and functions, but still useful for a semi-professional user.



service Ofoto. The Adobe Photoshop Services program has been integrated into Photoshop Elements 3.0 and Photoshop Album 2.0 applications for Windows, enabling instant prints via a Photoshop online service. Similar strategies can be expected from Microsoft as well.

### DSLR: Further Developments and Progress

Also of great interest is the progress made with reflex cameras by market leaders such as Nikon, Canon and Fujifilm. Fujifilm presented its new S3Pro, with a resolution of 12.34 million pixels. With 6.17 million pixels each in the areas of S- and R-pixels, the camera can produce effects that were previously only possible using special film.

Using the F1 mode for studio portraits produces soft, even posterization and absolutely natural-looking skin tones. The film simulation mode F2 is meant for nature photography: highly saturated blues and greens with strong contrast. With four different settings, the dynamic scope of the camera can be individually

The E-300 from Olympus is the only professional DSLR camera that comes with a 14-55 zoomlens. The user can use all the equipment of the "e-family."



adjusted. The camera's CCD SR II chip has pixel areas fine-tuned for details and light sensitivity, which makes it capable of transmitting even the smallest details onto an internal data carrier for I/O to the CCD chip. Using this technology, even image noise in high ISO areas (a condition usually criticized by many photographers) can be avoided with the S3Pro up to 1600 ISO.

Konica Minolta presented its Dynax 7D, a camera with an integrated antishake system. Unlike other antishake devices, this one is located inside the camera itself rather than on the lens, so that the user doesn't have to buy extra equipment later. With nearly 6.1 million pixel resolution and a solid metal casing, the 1,400 euro camera appeals primarily to the semi-professional market.

The Pentax ist DS cameras address exactly the same market. The Pentax device (18-55 mm, 3.5-5.6 zoom lens, 6.1 million pixels) has been on the market since the end of November at a price of nearly 1,000 euros. Incorporating FA-series Pentax lenses, it is one of the most compact reflex cameras on the market. The multi-auto focus of the ist DS, which compares different spots to get the best autofocus results, coupled with

*Nikon with the D70 and  
Canon with the EOS account  
for 80% of market share of all  
reflex cameras sold.*

a 16-array exposure meter system, can bring the focused image motive precisely to the CCD sensor. A penta-prism viewfinder with a visibility area of 95% evaluates the image before taking the picture. After taking the picture, the 2-inch TFT-LCD with 210,000 pixels displays it. Shutter speeds range from 1/400 of a second to 30 seconds. Light sensitivity ranges from ISO 200, 400, 800 and 1,600 up to ISO 3,200.

Why are so many manufacturers targeting the 1,000-euro market? The answer is simple: So far, Nikon with the D70 and Canon with the EOS account for 80% of market share of all reflex cameras sold. Olympus is also chasing this trend with the E-300, which will probably cost roughly 1,000 euros. This 8-megapixel camera utilizes a special CCD-Chip. The full-frame transfer CCD (FFT CCD) ensures that the optimum amount of image data is recorded.

The E-300 has a larger pixel area with larger photo diodes and data channels than Interline Transfer CCDs, which are used in most digital cameras, so it can store more image information. This leads to high signal-to-noise intervals and an expanded dynamic scope. The advantages are a larger exposure leeway, as well as highly detailed photographs with less noise.

The internal image processor TruePic Turbo

ensures quick processing of the recorded data and subsequently optimizes the image. The camera is shipped with the 14-55 Zuiko zoom lens, which was developed especially for digital use. Users working with the Olympus E-system can continue using Olympus' professional equipment.

### Medium Format

With the EOS-1Ds Mark II, Canon presented the high-end model of digital photography. Available since November for about 8,000 euros, the device has a 16.7-megapixel chip and is capable of up to four exposures per second in full resolution. Image data can be transmitted via standard networks over a wireless local area network transmitter or over an Ethernet cable at transfer rates of up to 56 Mbits per second under the wireless standard 802.11g. (Using 802.11b for direct connection with a notebook, the maximum transfer rate is 11 Mbits per second.) The wireless transmitter with the optional add-on antenna has a range of up to 150 meters. It uses its own power supply, with rechargeable batteries from the BP511-series, so operating the adapter does not affect the exposure capacity of the camera. The wireless transmitter acts as a network client and supports popular network protocols and safety standards. Furthermore, a connection with cable-based networks is possible with speeds up to 100 megabits.

The setup of the network (the TCP/IP settings or the MAC-address, for instance) takes place directly over the EOS-1Ds Mark II or the camera software. The adapter is connected to the camera by firewire cable and can be attached underneath the camera or to a belt with a clip.

Pictures from the EOS-1Ds Mark II are about 50 megabytes in size. Until now, the exposure and dynamic scope was only possible in the medium format. The new, full-format CMOS-sensor, with 16.7 megapixels (maximum resolution 4,992 by 3,328 pixels), presents almost exactly the measurements of a 35mm format (36 by 24 mm). Despite its high resolution, the EOS-1Ds Mark II's new DIGIC II sensor is capable of image sequence speeds of up to four pictures per second and 32 exposures in a row in the JPEG format (11 pictures in a row in RAW format). The Nikon also can transmit over a wireless LAN.

With the transmitter WT-1 and the wireless adapter WT- 2, the user can transmit IEEE802.11b/g-compatible data from the camera to the computer. In addition, Nikon has developed a new GPS cable (MC-35) to connect the camera to a GPS device. Upon receipt of the exposure data, the camera stores the geographic position (longitude/latitude/altitude), as well as a UTC time stamp (universal time, world standard time) for each photo.

The D2X, introduced at Photokina, reaches 12.4 megapixels with a new CMOS image sensor. In addition, the camera offers a remarkably fast shooting



Canon showed the EOS-1Ds Mark II, the highend DSLR for professional users. The Mark II comes with a wireless Wan inside.

speed when taking sequences of images. To make this possible, four high-speed channels transmit the file formats from the image sensor to a storage medium. With these improved electronics, the D2X can capture JPEG images with a resolution of 12.4 megapixels and data in RAW format, with five images per second for image sequences.

Up to eight-picture-per-second sequences can be taken with reduced image format. In this mode, the D2X utilizes a smaller, medium-size cropped sensor with a resolution of 6.8 megapixels ("high-speed frame"). Besides the implementation of the new CMOS image sensor, all image processing functions were improved.

Because of the improved attention to detail during digital processing with the new ASIC image processor, the colors blend without flaws, avoiding the blending problems typical of digital photography.

German manufacturer Leica introduced the digital module- R, which can convert the Leica's analog R8 and R9 cameras to digital cameras in just a few steps.



Nikon's D2X reaches 12.4 megapixels and comes with a new CMOS image sensor. The camera is fast; the engine can save up to five images with 12.4 megapixels in one second.



Leica presented the digital module-R, its solution for digital photography in 35mm.

Leica is the first manufacturer to introduce a digital camera back cover in 35mm format. Coupled with the Imacon-developed device, this allows the photographer to switch back and forth between analog and digital photography during shoots. With a resolution of 10 million pixels and a very low zoom extension factor of 1.37, this professional device is equipped “ready for production.”

Leica uses a CCD that was optimized by Kodak especially for Leica. It has a very thin glass cover to protect the surface of the sensor and an optimized micro lens structure. A plan to implement an anti-aliasing filter, which would reduce the image sharpness, was abandoned. When dealing with subtle effects such as skin tone, the software can avoid moiré effects of the sensor. A permanently implemented filter will not affect the quality of non-critical motives; the area of sensitivity ranges between ISO 100 and ISO 1600. For 4,500 euros, plus the camera, photographers get the luxury of toggling between digital and analog.

On the opposite end of the price spectrum is

With 2 megapixels and the typical Rolleiflex usage this Mini Digi is just something to play with. But it's much too expensive for a giveaway.



Rolleiflex. The legendary binocular vision reflex camera Rolleiflex is now available as a digital camera in miniature format, the Rolleiflex Mini Digi. For about 400 euros, the hardcore Rolleiflex fan gets a camera with 2 megapixels and a 9 mm focal length, weighing in at almost 100 grams.

Just as with the analog device, the user looks through the lens from above through the traditional light shaft. Inside the light shaft, however, is a fairly poor LCD monitor. (To prepare the camera for the next photo, the user has to operate a traditional film advance lever. It is unlikely that this collector's item will reach the mass market.)

### Image Correction & Recovery

French manufacturer DxO Labs showed Version 2.0 of the Software DxO Optics Pro. This professional application for converting and correcting RAW images is enabled by a DxO Demosaicing Algorithm basis, better known as Bayer-Interpolation, which produces a more focused and detailed conversion of RAW files. If the user sets the preferences of the software for his camera, the correction application automatically fixes blur, distortion, vignetting and lateral color edges. To achieve the best possible result when performing these corrections, the software takes into account all parameters relevant to the image, such as focal length, lens settings, ISO, etc. It even balances barrel or pincushion distortions of the image. The application is available for Macintosh and Windows.

When it comes to DSLR-photography, the user need not accept compromises, such as ratio between lens/sharpness, focal length/distortion. The software also allows for automatic processing in the batch mode. It costs between 70 and 120 euros, depending on the camera model, and can be obtained directly through the Web store.

Almost unnoticed in the hustle and bustle of the exhibit was the introduction of the Photo-D Charmer tool from Klearvision, manufacturer of the Photo-D Product- Suite. The software also automatically corrects digital photos, but it is addressed more at the amateur user. That said, the simple user interface could surely benefit from a few improvements.

Users can download individual or multiple images directly from the camera onto a computer and optimize them during the process. The result is impressive. It automatically corrects the images to be more natural, sharper or softer, with better colors. It even takes care of red-eye. The Klearvision algorithms, which “emulate the abilities of a professional photographer,” are the basis for the image corrections. The affected image is first analyzed, then corrected, taking into account the “human visual perception and psychological elements.” Moshe Keydar, chairman and head of technology of the small company from Israel and a former developer at Scitex, said: “We wanted to offer a simple tool for digital photographers to improve their

images that a home user can operate as well. Nevertheless, our technology is also useful to a professional.”

The German photo laboratory Photo Quelle also works with Klearvision’s software, he said. “We also want to offer our technology as an embedded solution,” said Keydar. “This is very attractive for many manufacturers of camera cell phones,” he said. “Also, manufacturers of print solutions are interested in us. After all, the goal is to eventually print more than just 27% of all digital images.”

In the near future, Klearvision wants to port the application to Unicode to offer a solution for the Apple Macintosh as well. A server solution, which would go past the hot folder functions of the Photo-D Pro solution, is planned for the future.

Although Klearvision has already implemented CMYK conversion, the technique is not yet provided in the current version. “The mass market currently focuses on RGB images,” Keydar said. The product is available in three versions: Photo-D Charmer is focused on the home user, Photo-D Pro aims at photo laboratories and also offers a hot folder function. The OEM version Photo-D OEM is a solution for large suppliers on the photo market.

LC Technology of Clearwater, Fla., presented at Photokina a software tool for Windows and Macintosh that recovers data that has been accidentally deleted from camera storage media. The standard tool, which costs about \$40, can rehabilitate formatted storage media and salvage the images from it.

This simple solution is now available in 21 languages. Based on a predefined template (altogether there are more than 100 predefined file types), it recognizes the file structure and writes the data back onto a storage volume. In the process, the volume is searched for the file header and the “end of file” entries. These entries are compared to the predefined template and saved if they match. The program recognizes RAW formats (except the new RAW standard that Adobe recently introduced), as well as GIF, JPEG, NEF, KDC, RAF, CRW, X3F and TIFF. The price includes all updates until the next major release.

DataRescue ([www.datarescue.com](http://www.datarescue.com)) also offers a tool for image recovery. However, the software, which can fully keep up with Photorecovery from LC Technology, makes possible the complete backup of the recovered data afterward. The Belgian company also has implemented an expert mode for stubborn cases. In the event of a failure of the normal recovery, further recovery mechanisms are available. The software costs around 40 euros from DataRescue.

### Adobe Joins In

Adobe also had news to present at the Photokina, primarily its .DNG specification. DNG, or digital negative, makes it possible to save the source data of the digital image in its original state. For Adobe, the RAW file format is the digital equivalent to the traditional



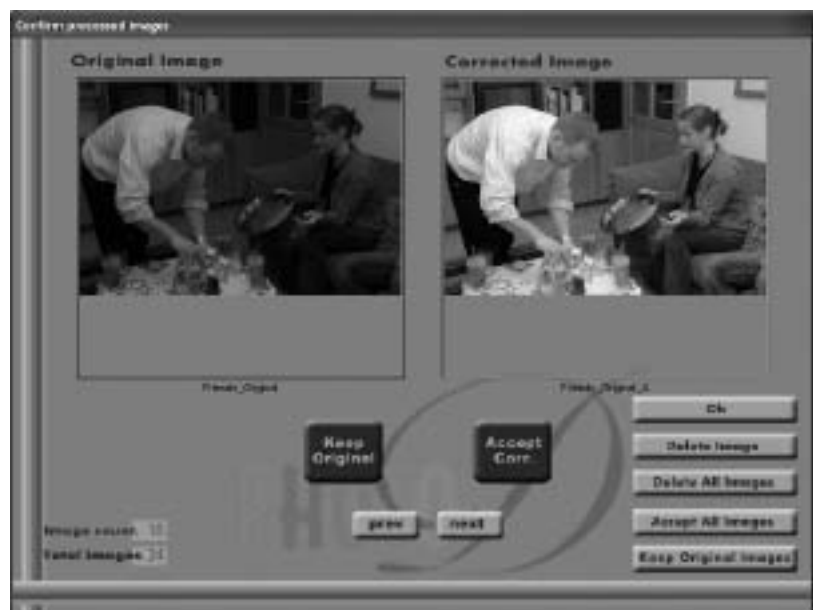
film negative. In digital exposures, the DNG data contains all compiled image information. When the image is processed later, this will result in greater flexibility and better photo quality.

The public specification gives camera manufacturers the option to agree upon a standard and democratize the partly proprietary RAW systems. Bryan Lamkin, senior VP of digital imaging and digital video products at Adobe, said: “Different formats complicate the work for customers and publishers. Besides, nobody knows today which of the currently used RAW formats will still be supported 10 years from now. Customers have asked us to develop a uniform, common format for RAW data. Current RAW formats are not suitable for this, because they are not documented and tied to specific camera models,” he said.

This raises the risk for these formats to become

Klearvision presented its Photo-D Pro solution for the first time at Photokina.

As well, the “low-end” version, Photo Charmer, of the Klearvision technology optimizes digital pictures with “human sense.”



obsolete over time, he said. “The digital negative format makes it possible to save digital photos in their original form, even for generations,” he said.

Based on the accepted standard TIFF EP, DNG not only contains image data, but also a multitude of meta-data. These are necessary in the file to define the con-

*The digital negative format makes it possible to save digital photos in their original form, even for generations.*

ditions of the taken picture and to transfer them to a content management system. A .DNG file format converter is available free at [www.adobe.com/dng](http://www.adobe.com/dng). At the same time, Adobe has published a corresponding Plug-In for Photoshop CS.

### **Bottom Line: New Beginnings for the Photo Industry**

Photokina 2004 proved that the photo industry has found its way. Despite the film crisis and decreasing sales in the printer sector, the manufacturers managed to come up with new, cheaper products that are appealing to professionals as well as consumers. But mostly Photokina provided proof that the photography and prepress markets will further merge in the future.

Film scanners, for example, cost several thousand dollars only a few years ago. Epson now offers them for 600 euros with a resolution of 3,600 dpi and an insert for slides and negatives. The scanner is now automatically implemented in the in-house prepress. The high end has become affordable. It is too bad that Photokina didn't take the opportunity to emphasize topics such as content management, job tickets, etc. in a special exhibit. However, progress is being made...

**TSR**