# Infoimaging@Work

## A $385 Billion Industry

## Devices

### Health Imaging Technologies

Health imaging technologies help medical professionals and their patients.

### Sensors

Kodak's solid-state sensors set new standards for digital imaging.

### Professional Devices

Digital imaging is empowering professional photographers as never before.

### Flat-panel displays

Kodak and Sanyo are working together to make OLED displays.

### X-ray Laser Output

Kodak DryView laser imagers create hard copy prints of X-rays.

### Digital cameras

Digital cameras are changing the way people use and share pictures.

### Scanners

Scanners are devices that turn images into information.

# Infrastructure

## Online imaging networks

Imaging networks enable people and businesses to share digital images.

## Software

Kodak software services are the foundation of digital imaging.

## Photofinishing Networks

Digital photofinishing is raising the quality of consumers' pictures.

## Metadata

Metadata -- the digital subtext in your pictures -- helps improve them.

## Imaging Protocols and Transmissions

Kodak pioneered the technical standards that simplify digital photography.

## Services and Media

### Document Preservation

Preserving documents on film or digital media for future use.

### Medical Imaging Services

Kodak provides leading products to capture and manage medical images.

### Inkjet Papers and Systems

Digital pictures and inkjet printing deliver a powerful 1-2 punch.

### Online Photo-Sharing Services

Millions of digital camera owners now print their pictures online.

### Film and Paper

Film remains a cost-effective way to enjoy pictures.

### CD and CD-ROMs

CD-ROMs and writable CDs are tomorrow's photo albums.

### Cinesite

Cinesite creates digital magic in motion pictures.

# Health Imaging Equipment

**Health imaging technologies**

Combining life-saving information and images is the mission of Kodak's Health Imaging division. Healthcare professionals worldwide rely on Kodak's Picture Archiving and Communications Systems (PACS) and Medical Image Streaming Technology (MIST) to capture, process, print, view, store, and send diagnostic images. Kodak's DirectView web distribution system sends images beyond a radiology department -- quickly, easily, and and securely. Kodak is leveraging 100+ years of innovation to advance health imaging and improve the efficiency of healthcare.

Kodak health imaging systems have helped diagnose and treat injuries at the last four Olympics events worldwide. Recently, Veterans Affairs centers in metro New York ordered Kodak computed radiography (CR) systems and Kodak DryView laser imaging systems. The order with Veterans Integrated Service Network of New York/New Jersey will place Kodak medical imaging equipment at seven VA facilities in New York and New Jersey.

# Professional Devices

**Digital technologies power new capture devices**

Digital imaging is empowering professional photographers, studios, and commercial labs. In this infoimaging segment, the power of images -- and their ability to communicate -- is unleashed as never before.

For professional portrait, wedding, event, and commercial photography, the new Kodak Professional DCS pro 14n digital camera offers the industry a full 35mm size CMOS sensor and an incredible 13.89 million total pixels. Photojournalists use Kodak Professional DCS 720x and 760 digital cameras to capture amazingly detailed 18-megabyte images with an SLR-based system.

For portraiture, advertising, catalog and other commercial applications, the Kodak DCS pro back 645 and pro back plus pack a 16-megapixel sensor that delivers stunning 12-bit per color images. The pro backs fit a range of Hasselblad, Bronica, Contax, Mamiya and other large- and medium-format camera bodies.

# X-ray Laser Output

**Laser printing provides sharp diagnostic solutions**

Even as healthcare professionals adopt digital diagnostic solutions, physicians want a printed image to study, duplicate, and share. Kodak understands this intersection of infoimaging. So, Kodak's family of DryView laser imagers delivers sharp, diagnostic-quality images that radiologists demand without chemical processing. These X-rays may be archived for more than 100 years. With more choices for speed, performance and value than any other brand, Kodak DryView laser imagers are the best-selling in the industry.

Kodak wet laser imagers and film deliver high-quality images to meet radiologists' workflow needs. And these images may be shared on a PACS network for diagnostic consultations.

Advances in this device technology are a major step toward future image and information management solutions from Kodak.

# Scanners

**Transforming documents from paper to digital files**

Document scanners, film scanners, scanners that capture color or black-and-white images -- Kodak technologies lead the migration from paper to digital storage of information and images. Scanners are the workhorse for high-volume needs in government and insurance, for example. These digital tools made Kodak's Document Imaging division the company's first profitable digital business. Using Kodak scanners, the 2000 U.S. Census was completed in less than two months.

Recent additions to Kodak's family of document and film scanners have reached users in low- and mid-volume workplaces, such as commercial photo labs and small businesses. These devices make sharing image files easier and more affordable.

# Sensors

**Providing the digital eyes of infoimaging**

Kodak's solid-state sensors are the digital eyes of sophisticated professional digital cameras, machine-vision devices, and even NASA deep-space probes, such as the Mars Pathfinder project.

As infoimaging initiatives explore new ways to capture and convert images into digital information, Kodak sensors -- ranging from CCD (full-frame, interline, linear) to the company's new line of CMOS performance imagers -- are setting new standards. By redefining the way industries receive images and information, Kodak sensors are employed in commercial, medical and industrial applications. Kodak sensors are the heart of today's high-end professional digital cameras.

One example: the Kodak KAF-22000CE image sensor, a 22 million pixel, full-frame color CCD image sensor, is the world's highest resolution image sensor for the professional photographic market. Designed in conjunction with Sinar AG, a Swiss manufacturer of digital and analog camera systems, this sensor powers a new generation of medium- and large-format cameras.

# Flat-panel Displays

## OLED technology fuels next-generation displays

The market for organic light emitting diode (OLED) displays from Kodak's Expanded Display Group is expected to range from $900 million to $3.6 billion by 2005, according to Stanford Resources and DisplaySearch. A new global joint venture, the SK Display Corporation, will manufacture OLED displays for consumer cameras, PDAs, and other portable devices. SK Display's parent companies -- Kodak and Sanyo Electric Co., Ltd. -- will commit $350 million to establish a joint venture to manufacture these displays.

OLED displays offer advantages over current liquid crystal display technology. They're thinner, they consume less power, and they have brighter, more colorful displays, plus an unlimited viewing angle.

In October 2002, Kodak and Sanyo unveiled a prototype 15-inch flat-panel OLED display at the CEATEC JAPAN trade show. The active-matrix display features full-color, 1280 x 720 (HDTV) resolution; a display area of 326.4 x 183.6mm; and a brightness that rivals the best active-matrix LCD monitors currently available.

# Digital Cameras

**Changing the ways people share pictures**

Kodak digital cameras enable consumers and businesses to capture and share memories and information in pictures. Ease-of-use is essential; Kodak's EasyShare system includes a digital camera, software, and a one-touch camera dock. Some models include a movie mode that lets people capture mini-movies.

Digital photography is changing the way people use pictures. House-hunters and real estate agents use digital pictures to highlight key features of homes for sale. Moviemakers use digital cameras to catalog potential location shots. Digital pictures now appear on home-made CDs and clothing. And so on.

Online and in-store digital printing completes the tapestry of digital photography, delivering high-quality prints of consumers' digital pictures.

The EasyShare system spans all three infoimaging segments: devices, infrastructure, and services/media. Kodak's digital camera portfolio, inkjet photo papers and online photofinishing illustrate how images and information technology create a seamless system.

# Online Imaging Networks

**Creating an online architecture for digital pictures**

In digital form, pictures can be shared across vast distances, using advanced networks, servers, and output methods. To manage and share them, infoimaging participants need bandwidth and connections that link computers at home, on the road, and in the workplace.

The picture infrastructure includes:

- Online photofinishing networks that help users upload pictures, create online albums, and order prints and other photo products. Ofoto, Inc., a Kodak company, is a key link in this photofinishing infrastructure. Others include K-Mart's Bluelight.com, Walgreen's, and CVS.com.

- Standards and software that enable seamless sharing of pictures between home and workplace PCs and networked systems. Kodak pioneered the technical standards for sharing digital pictures, and today is a leader in initiatives to create industry standards that simplify the transmission and printing of digital images. One such standard, the CPXe initiative, is working to simplify the connections between digital cameras, PCs, desktop software, Internet services, photo kiosks and retail and wholesale photofinishing providers.

- Metadata -- digital "footnotes" hidden in most digital pictures -- helps photofinishing systems flag pictures for special processing, and links prints and enlargements to a customer's order. It can embed a copyright mark to prevent unauthorized use. Soon, metadata will help people organize their digital shoebox of photos into convenient electronic albums.

# Photofinishing Networks

## Digital scanning, printing improves consumers' pictures

The magic starts when you drop off a roll of film or a digital memory card at a retail photo outlet. Today's advanced photofinishing technologies scan each frame or picture file, adjusting for optimal color balance, contrast and even removing unwanted red-eye from your pictures.

Kodak's digital output equipment, software, and services simplify the magic of photo-processing for consumers and retailers. For retailers offering the Kodak picture center online and uploads to Ofoto.com, simple online editing enhances photos effortlessly. Consumers can upload digital pictures from their computers and order prints in multiple sizes. Orders are mailed directly to consumers.

The Kodak I-lab system, a wholesale digital system using Kodak software, corrects the most common consumer picture problems, such as underexposure and red eye. In 2003, this technology will roll out to more consumers as Kodak Perfect Touch or Kodak Picture Perfect photofinishing.

# Imaging Protocols

**Creating a common digital language**

Protocols and standards are the "digital language" of infoimaging. Kodak trail-blazed the technical standards that enable computer networks to share and recognize image files.

These standards help simplify digital photography, hastening the convergence of images and information. In 2000, the Photographic Imaging Manufacturers Association (PIMA) established the picture transfer protocol (PTP) that lets digital cameras talk to computers, printers, and other devices. Since then, Kodak products using the PTP standard include the DC4800 zoom camera, and DX3500 and DX3600 digital cameras. PIMA has become the International Imaging Industry Association (I3A) and today supports the CPXe open standard that links digital camera owners with a retailer directory accessible via their computers.

# Software

**Simplifying the steps from camera to computer**

Kodak's software services are the foundation of tomorrow's digital photofinishing infrastructure. A key component is Kodak's digital image processing and special application software that enables better pictures, improved productivity, and lower costs.

For consumers, software and firmware in the EasyShare system enable consumers to tag images in their EasyShare digital cameras for emailing and printing. Kodak's digital output equipment software and services help speed and simplify the sharing and printing of pictures, with better results. Kodak works with software developers to create and identify applications that work with Kodak digital cameras, printers and photofinishing services.



Shoot.
Simulated image

Touch.

Share.

# Document Preservation

**Infoimaging technologies help preserve documents**

While digitized documents offer flexibility, film remains a proven, long-term way to store information. Archive media -- which outlives generations -- are integral to the infoimaging media mix.

Kodak continues to develop innovative solutions for digital document preservation, such as high-speed document archive writers that convert electronic files to film. Businesses, institutions, government and service bureaus know that critical information needs to be preserved for generations to come. Kodak's microimaging technology leads the industry in solutions for digital document preservation.

# Inkjet Paper and Systems

**Speed, convenience drive inkjet printing**

Inkjet printing provides convenient color, hard-copy output from a digital file that may contain a combination of pictures, graphics, and text. Affordable inkjet printers offer high-quality results that are well suited for many business and home applications. Inkjet printers and media are part of a rapidly growing market of color graphics and pictorial displays. Many traditional professional, commercial, and reprographic labs also offer this type of output.

Kodak has met this infoimaging market need with a three-tier offering of inkjet papers: Kodak ultima paper, premium paper, and anytime picture paper, to meet a variety of inkjet printing needs.

For the professional segment, Encad, Inc. -- a Kodak company -- is a complete wide-format inkjet resource. Encad provides customers with a full set of offerings, including inkjet printers, inks, media, software, and service. By combining Kodak's leading-edge printer technology, heritage in ink, media, imaging and color science with Encad's pioneering wide-format expertise and industry relationships, Encad offers a leading portfolio of solutions within the wide-format inkjet industry.

# Film and Paper

**Creating affordable, high-quality images**

For many, film and paper are the easiest affordable way to take, print and share pictures. Sales of Kodak Max HQ one-time-use cameras -- pre-loaded with Kodak Max 800 color negative film -- continue to soar.

Kodak papers continue to evolve to produce high-quality images. Kodak's range of paper products includes professional black-and-white paper with excellent tone reproduction from scanned color positives, color negatives, and black and white negatives. Newer color metallic papers offer a unique metallic look.

# Cinesite

**Digital film mastering and post-production**

Whether creating amazing explosions or crashes in movies such as *Erin Brockovich,* or giving speech to animals in *Animal Farm,* Kodak's Cinesite subsidiary takes digital post-production to unprecedented levels. The studio -- with facilities in Europe and Hollywood -- redefines infoimaging with each new digital enhancement to a major motion picture.

# Medical Imaging Services

### Adding digital to dentistry, diagnostics

Today, Kodak provides the medical industry with leading products for the capture, processing, viewing, printing and storing of images for diagnostic and non-diagnostic applications.

For dentists, the Kodak DX4900 dental digital camera kit -- including the EasyShare DX4900 digital camera -- provides everything dentists need to use digital imaging for case consultation, insurance claims, teledentistry, forensics, and documentation. Kodak and medical imaging have been a powerful combination advancing patient care for more than a century.



Image courtesy of Swissray. Captured with KAF-1101E Image Sensor

# Online Photo-sharing Services

**Getting consumers' pictures on the web**

Millions of digital camera owners now print their pictures online, rather than use home printers. Kodak-powered retailer processing services at CVS.com, K-Mart's Bluelight.com, and Rite-Aid offer convenient digital processing of uploaded digital pictures or film dropped off at retail for scanning and processing.

Kodak's Ofoto subsidiary is a premiere provider of online photo processing and photo sharing services. Ofoto bridges Kodak's film scanning and uploading services and Kodak's output capabilities through its Qualex photo labs. Ofoto gives members picture storage, sharing through online albums, enhancing and printing services.

Result? Infoimaging helps fuel the emotional experience of sharing pictures with friends and family.

# CDs and CD-ROMs

**Preserving and sharing data and pictures**

Infoimaging, at its simplest level, helps consumers replace the cumbersome "shoebox method" of storing and neglecting their disorganized prints. Today, Kodak offers the equivalent of a multi-media shoebox, more user-friendly than the one from the shoe store. For example, Kodak Picture CD allows consumers to digitally archive traditional film. And once the images and information are put on CD, they're easy to modify, enhance, share and manage.

# Metadata

**Developing the backstory for digital images**

Metadata -- the invisible digital subtext in digital pictures -- can be used to improve your prints, or append additional information, such as global positioning information and audio notations. It's the "backstory" for infoimaging.

Today's digital cameras record global positioning information, sound, and exposure data, otherwise known as "metadata." Tomorrow, it will capture subjects' names and addresses, the photographer's name, and picture location. Metadata can flag pictures that require special processing or printing, linking prints and enlargements to a customer's order. It can embed a copyright mark to prevent unauthorized usage and will help people organize their digital shoebox of photos.

Metadata's ability to preserve additional information beyond the image holds great promise as users do more with their digital picture files.



\* Without

With PERFECT TOUCH Processing

\* Printed with regular processing