

Timeline: 20 years of digital photography

Year	
Pre Firstcall	<ul style="list-style-type: none"> • 1981: Sony unveils a prototype of the company's first still video camera, the Mavica (Magnetic Video Camera). • 1987: The first issue of <i>Electronic Photography News</i> is published • 1986: Kodak announces the development of the world's first megapixel digital sensor small enough to function in a handheld camera, a sensor that had 1.4 million pixels. • 1988: Fuji introduce a digital still camera at the Photokina show in Germany
1990	<ul style="list-style-type: none"> • Kodak announces its Photo CD, a device for recording photos on compact disks and displaying them on television screens. The Photo CD stored 100 colour digital electronic images scanned from 35mm film at about the same resolution as a 35mm negative (18million pixels) • Dycam Model 1 (Dark Grey) and the Fotoman (White) were the first digital consumer camera sold in the UK (both made by Dycam). They stored 32 compressed monochrome images on internal 1MB RAM. 1/3-inch, 376 x 240 pixel CCD at 256 grey levels. The camera was attached to a PC to transfer images and sold for £650. • Adobe Photoshop 1.0 is released • Olympus shows a prototype version of their still digital camera. Equipped with a 2 megabyte card, the camera produces 52 images through the use of an in-camera DCT compression algorithm
1991	<ul style="list-style-type: none"> • The Kodak Professional Digital Camera System (DCS) is introduced, using a Kodak electronic 1.3 megapixel sensor to back standard 35mm single lens reflex Nikon cameras. The DCS was aimed at photojournalists and sold for £18,750 • Sony launches their CVP-G500, the first still video image capture device and printer combined into one unit. • Canon introduces its first Hi-band still video camera. Called the RC-260, it was a full-feature (record / playback / erasure) still video camera. It had a 1/2 inch 230,000 pixel CCD image sensor, recording and playback with horizontal resolution of 320 TV lines and used VF-50 video floppy disks. It launched at a price of £700. This was the first “electronic photographic” product Firstcall sold. • MiniDiscs were announced in 1991 by Sony as a disc-based digital medium for recording and distributing consumer audio that is “near CD” in quality. The Minidisc was developed as a recording and playback device that would use a disk smaller than the CD to replace the audio compact cassette. • Tamron launches their FotoVix, an unusual type of video camera. The FotoVix converted negatives or slides into NTSC video output for viewing on a TV monitor or recording to tape, but could also scan small objects. Stills could be viewed on a PC through use of a video capture device. CCD of approximately 410K pixels. Quality of stills was reported to be relatively poor for a “bargain” price of £550.

1992	<ul style="list-style-type: none"> • The National Centre for Supercomputing Applications, a unit of the University of Illinois at Urbana-Champaign, released Mosaic, the first browser enabling users to view photographs over the web. • Kodak's DCS 200 had a built-in hard drive for image recording and was on sale from 1992 to 1994, it was based on the Nikon F801. There were five variants of the DCS200 and the resolution was 1.54 million pixels, providing four times the resolution of still-video cameras at that time. • Leaf produced the first digital camera, the DCB 1. The original Leaf CCD chip made colour images by taking three separate exposures through a colour filter wheel containing red, green and blue filters. Used for studio still-life. It had a 4.2 MP sensor (2048 X 2048). It was often used with Hasselblad 553ELX cameras.
1993	<ul style="list-style-type: none"> • The Indigo E-Print 1000 is the world's first electro photographic digital press. Shortly afterwards, the Agfa Chromapress, the first digital press to incorporate a Xeikon engine, was launched at IPEX '93. The Indigo and Xeikon systems finally enabled digital printing to become a viable method of producing print from digital files on-demand in four colours with a relatively high quality. • Canon introduces their first prototype EOS SLR at 1.3MP. • Fuji shows the DS-200F camera, the world's first digital camera with flash memory. • In 1993 Sony announced MD Data, a version of the MiniDisc to be used for storing computer data. The Data Minidisk was used later in the 1997 Sony Cybershot DSC-MD1 camera.
1994	<ul style="list-style-type: none"> • The final JPEG colour image data compression standard was agreed. • The Apple Quicktake 100 camera, made by Kodak, is the first to connect to the home computer by a USB cable. Aimed at the consumer market, it had a 640 x 480 pixel CCD and produced eight images which could be stored in its digital memory • AP/Kodak NC2000 and NC2000E became the first professional digital cameras marketed specifically for photojournalists. based on the Nikon F90 and F90s. 1024 x 1280 pixel CCD, ISO 200 – 1600, shutter 1/8000 to 30 seconds. The Vancouver Sun newspaper converted to all digital photography in May of 1995. The paper became the world's first to convert from a film-based photo-production system to an all-digital camera based photo-production system. The staff realized that it was a tool that would revolutionize the newspaper and wire service industry, and a tool photojournalists had to master. Original selling price was £11,200. • Epson Stylus Colour MJ-700V2C is the first desktop photorealistic printer. At 720 by 720 dots per inch, it offered double the resolution of other colour printers of the time. • Introduction of the Sony DKC 5000 CatsEye. This camera, intended for commercial studio applications, used an impressive variation of three-chip technology. • The CompactFlash (CF) storage card, the world's smallest removable data storage system at the time, was introduced by SanDisk. A solid-state 32-bit CF cartridge, about the size of a matchbook, was 36mm long, 43mm wide and 3.3mm thick. The

	<p>storage cards were available in 2, 4, 10 and 15MB capacities.</p> <ul style="list-style-type: none"> • Philips launches their CDi unit, an interactive CD unit plugged into a TV that played Kodak Photo CDs and educational CDs for £400. • Firstcall launched its first CD transfer service to put 20 traditional images from slides or negatives onto a CD for £16. • The Olympus VC-1100 was the world's first digital camera with built-in transmission capabilities. Photojournalists and other photographers could connect a modem to the VC-1100 and upload digital photos over mobile and analogue phone lines. The camera, which had a built-in zoom lens and an image-capture resolution of 768 by 576 pixels, stored images on PCMCIA cards. Its colour LCD viewfinder let you preview photos on location. Shutter 1/8 to 1/1000 second. Lens 54mm and 108mm. It transmitted at the rate of one frame every one to six minutes, depending on the picture quality required.
1995	<ul style="list-style-type: none"> • The first digital still camera with an LCD panel for taking and viewing pictures arrives on the market: the Casio QV10 (1.8 diagonal inch LCD back for viewing, 250K CCD imager) • Canon introduces their CE300, an IBM PC110 dedicated card-sized camera. This was the first card slot camera. 320 x 240 pixel CCD camera with 55 mm f/2.8 lens, ISO 100 and shutter speed 1/15-1/2000 second. • Kodak and Canon introduce several new models of digital camera, based on the Canon EOS body. Previously, Kodak had been allied with Nikon in digital camera advances. • The Kodak DC-40 Point-and-Shoot digital camera is introduced. • Ricoh's RDC-1 was the first digital camera to offer both still and moving image and sound recording/reproduction. Its recording capacity on a 24MB PC card was 173 still pictures in standard mode with 10 seconds of sound, or four video scenes of 5 seconds each with sound, or one hour and forty-five minutes of sound only. The DM-1 removable 2.5 inch colour LCD monitor provided a live viewfinder image. 768 x 480 pixels CCD. 3x f/2.8 zoom. It cost around £1000. • Chinon launch a range of new digital consumer cameras including the Chinon ES-3000. • Kodak shows a digital printer that is able to produce 20 x 30-inch enlargements, at the Photo Marketing International show in Las Vegas.
1996	<ul style="list-style-type: none"> • Several new low-cost digital still cameras are introduced, many under the £700 range. Some such models include the Apple QuickTake 150, the Kodak DS 40 and the Casio Digital Camera. • Dicomed launch the BigShot product range (BigShot 1000, BigShot 3000 and BigShot 4000), built on a unique solution for the camera back which not only exceeded the traditional 35mm frame size, but also exceeded the 5.6x5.6cm size of a Hasselblad back. A 4K x 4K sensor produced a separate red, green and blue record of the scene being photographed – all in the space of time that the electronic flash operated. • Advanced Photo System format is introduced, attempting to provide a bridge from film to the digital world. • Nikon announce the Coolpix 100, which is the first camera with a removable PC card slot camera insert.

	<ul style="list-style-type: none"> • Canon introduces the PowerShot 600. This 832 x 608 pixel CCD with optical viewfinder plus LCD was the first consumer digicam able to use harddisk drive. Able to store up to 176MB of images it sold for £590. • The Digital Versatile Disk (DVD), a new recording media technology for storing home video images, first became available in Japan.
1997	<ul style="list-style-type: none"> • Sharp introduce their J-SH04, which is the first digital camera phone (CDD imager). Sales began in 1999. • Firstcall starts selling CD Recorders from Yamaha and Ricoh. The external Yamaha CDR102 2x recorder costs £599 plus VAT • The Kodak Picture Network is announced, allowing people to view their photos, order reprints and share their pictures with friends and family via the Internet • We introduce Philips CDi discs. An extension of the CDi player (£500) these educational movie discs sold for £40 each • AP's digital camera of the year was the Fuji DS-7. Using Smart Media (discontinued in 2005) it stored 30 images using a 0.3Mp chip and cost £450. • Kodak announces their Digital Science DC120 Zoom digital camera, which is the first point-and-shoot camera with 1 megapixel quality digital camera under £900. • The Digital Imaging Group (DIG) is launched. The open-industry consortium was created to expand the use of digital images across consumer, business and professional imaging markets and applications. • The Olympus Camedia D-500L and 600L models were the first non-SLR digital cameras to have TTL (through-the-lens) viewfinders. SRP £900. • The introduction of the HP PhotoSmart system, including photo printer, photo scanner, digital camera, photo paper and image-editing software, allows people to reproduce photographs at home for the first time.
1998	<ul style="list-style-type: none"> • Intel and Kodak announce their Picture CD an innovative CD-ROM that combines 1536 x 1024 pixel images of the consumer's photographs with a library of applications software. It can be played on any computer with a new CD-ROM drive. • America Online and Kodak announced "You've Got Pictures!" a service where AOL members could have their processed pictures delivered online. • Epson launch their FilmScan 200 model with SCSI – our first 35mm film scanner to digitize traditional film at £450. • Kodak Professional's new DCS-315 Digital Still Camera marks the first use of an Advanced Photo System single lens reflex (SLR) body for digital photography and is based on the Nikon Pronea 6i. Priced at £3800. • Epson ink jet printers increase resolution to 1440 dpi with the A3 1520 model for £699. • The new Kodak Professional DCS-520 digital camera, developed jointly with Canon, uses a 2 megapixel sensor and more than 30 Kodak patents to provide increased burst rate and speed, enhanced blue channel, colour LCD viewing, anti-aliasing capacity and 12-bit colour.

	<ul style="list-style-type: none"> • Fuji shows its In-Printer Camera, an Instax Mini Printer, and FinePix PR21. It stored images on SmartMedia memory cards. and utilized the Fuji Instax Mini film to produce credit-card sized prints. In 1999, the FinePix PR21, an improved version this model became the world's first digital camera with an integral printer. It had an 1800 x 2100 pixel CCD. • Nintendo announced the Gameboy camera. This 128 x 128 pixel black & white CMOS sensor camera plugged into the Nintendo Game Boy as a game cartridge and allowed users to acquire images and edit them for viewing or output on a small printer. Four levels of gray scale. The camera lens was able to rotate 360 degrees. It could print photos with the Game Boy Pocket Printer and cost only £50 • The Sony Memory Stick, a removable flash memory card format with a simple 10-pin connection, is first showcased.
1999	<ul style="list-style-type: none"> • Nikon release the Nikon D1. This is the first DSLR to start to take the market share away from film SLRs. • Sony revolutionizes digital photography in schools with the Mavica FD (FD = floppy disk) cameras. They came with a variety of features unmatched by other digicams at the time such as its 14X zoom and image stabilization and stored 40 images on standard floppy disks. They also used Sony's Info Lithium batteries as a power source which did not have a memory so could be recharged at any time. They could record MPEG images with sound or record audio memos with each still image. 1/3-inch 1024 x 768 pixel CCD – our most popular model was the FD51 at £400. • Fujifilm announce the development of a next generation charge-coupled device (CCD) technology which uses octagonal-, rather than rectangular-, shaped photodiodes. This Super CCD creates greater highlight and shadow detail, as well as improved sharpness and colour saturation. • Dye sublimation printers are available to consumers for the first time with the Olympus P300 model – 300dpi for £500. Fuji's answer to this was their Autochrome model, the NX-5D that sold for £300. • The Minolta RD3000 was shown (but not marketed until 2000) and was the first D-SLR to use lenses other than those built for 35mm film cameras (APS). 2 x 1.5 Megapixel CCD's = 2.7 Megapixel image (1,984 x 1,360). SRP £2,200 • Minolta also launched its Dimage range of film scanners – our most popular range in our history. With 2438 dpi they scanned 35mm or APS images and cost £360. • We sell our highest capacity 16 Mb CompactFlash card for £120 • Shutterfly.com, an Internet service that prints and stores photos taken with digital cameras, makes its debut.
2000	<ul style="list-style-type: none"> • The Fuji FinePix S1 Pro is released, aimed at the professional • Kodak introduced a new PalmPix camera that turns the handheld Palm m100 into a digital camera • The International Standards Organisation's JPEG2000 committee finalise specifications for the JPEG 2000 algorithm. • Samsung integrate a digital camera into a mobile phone that can take up to 20 pictures of 640 x 480 pixels (350 000 pixel CCD, 1MB internal storage)

2001	<ul style="list-style-type: none"> • Agfa announces its intention to withdraw from the digital camera market • Google launches a search engine for images • Launch of the Durst Rho 160, the first high-performance inkjet printer for industrial large-format digital printing for photo laboratories, screen printing and the publishing industry. • Fuji launches their FinePix 2600 Zoom, a 1600 x 1200 pixels. ISO 100. 38-114 mm zoom camera. Shutter 1/1000 sec to 1/2 sec. This 2 Mp camera was the first in a long line of “mass market” cameras (for £250) which continues to this day. • Foveon announce its pioneering X3 image sensor, built using a pixel layering concept in which red, green, and blue pixels are stacked on top of each other. Previous colour image sensor technologies relied on a pattern of red, green, and blue pixels that arranged next to each other.
2002	<ul style="list-style-type: none"> • Sony announces its MVC-CD200 the last of its Mavica range. This MiniCD 8cm disk camera at 2272 x 1704 pixels and ISO 100-400. F2 34-102 mm zoom sold for an expensive £700. • Film scanning becomes the “norm” for converting analogue images to digital. We sell 9 film scanners from Canon, Fuji, Minolta, Nikon and Jenoptik. • Kodak sets out to become a big seller of digital cameras after its purchase of Chinnon with the launch of the DX3600 2.2 Mp camera for £300. • Canon’s latest EOS D30 SLR had a high 3.3 Mp chip but the body only had a high price of £1700. • CompactFlash cards reached the “dizzy” storage capacity of 512Mb but cost £550 each. • Adobe launches Photoshop Elements (1). The stripped-down version of Photoshop sells for £70 – the same price each new version has been ever since.
2003	<ul style="list-style-type: none"> • Canon begin producing image sensors capable of detecting 6.3 megapixels • The Canon EOS 300D is announced, allowing photographers to attach the lenses from their old film cameras • Kodak introduce the Kodak EasyShare LS633 zoom digital camera, which is the first digital camera to use an organic light-emitting diode (OLED) display • Jessops introduce a low-cost DFS-1800 film scanner. At £120 it scanned 35mm film at 1800 dpi. • Canon’s PowerShot G2 is introduced to offer high-quality, 4Mp digital photography in a compact camera for £600 • Wacom introduce the Graphire tablet – a low cost entry model as mouse alternative for digital photography for £75. • Epson introduce the Stylus Photo 2100 ink jet printer. This A3+ pigment ink printer was the first printer to address the archival problem of fading from ink jet prints. • The introduction of Firewire capability leads to a growth in camcorder editing at home through companies like Pinnacle

2004	<ul style="list-style-type: none"> • Kodak announce that they will no longer be producing film cameras • 2-3Mp compact cameras become the standard for picture taking but still average £200 • Nikon launches the 6.1 Mp D70 SLR to rival the Canon EOS 300D at £1000 and RAW file capture comes of age. • Manufacturers start to promote high-resolution compact cameras (6Mp+) that include lithium ion batteries and tilting screens • ICI introduces Olmec inkjet paper offering photo-realistic images at budget pricing
2005	<ul style="list-style-type: none"> • Delkin Devices announce their pop-up shade accessory for digital point-and-shoot cameras, enabling the photographer to view the camera's LCD screen in the sunlight and protect it from damage • Sony introduce their first DVD recording camcorders • Dye sublimation printers from Canon and Sony introduced to offer cleaner and quicker printing of digital images • Ink-flow systems from Fotospeed are developed to overcome the high cost of replacing ink jet cartridges in printers • Print scanners reach film scanners standards at 4800 x 9600 dpi • Portable hard drives up to 40GB from Versonic make the copying of digital images easier and convenient • Epson F-3200 launched as a combined film and print scanner for £490 • SmartMedia cards are discontinued after 8 years of sales
2006	<ul style="list-style-type: none"> • Nikon stops making all but two film cameras • Konica Minolta withdraws from entirely from the digital photo market • Epson Picturemate launched as the leading personal ink-jet printer for £140 – they withdrew from this market in 2009 • Pixma ink-jet printer range introduced by Canon as a rival to Epson/HP market dominance • Canon introduce HD output digital camcorders but also announce that they will no longer be selling film cameras • SDHC (Secure Digital High Capacity) memory cards, an extension of the SD standard, are announced, boasting a storage capacity of up to 32 GB. • 6-7Mp compact cameras become the standard for picture taking but now average under £200 • Camera manufacturers promote “docks” for their cameras to make picture making and printing more convenient • The “multifunctional” printer that prints, copies, scans and faxes comes of age promoted by Epson, Canon and HP. Stand alone printers all decline in sales from this date
2007	<ul style="list-style-type: none"> • On-line uploading and printing of images becomes more common with broadband use and new services from retailers like PhotoBox • Nikon and Canon recognize a new market for their SLR cameras called “prosumer” like the D200 for amateurs who want professional results. • Sony, having bought the rights to Minolta launches their first SLR the 10 Mp A1000 complete with Minolta mount for £700 • Panasonic becomes a new force in digital photography with their

	<ul style="list-style-type: none"> Lumix brand and the first 10 Mp compact. LCD displays get bigger on cameras (2.5 inches) as viewfinders disappear Harman introduce the first fibre-based ink jet paper that rivals silver halide printing LCD projectors get used more for image projection as the price falls to below £500 Major advances in camera design are implemented including image stabilisation, red-eye correction, face recognition, lighting compensation and increased ISO sensitivity
2008	<ul style="list-style-type: none"> Polaroid instant film and camera maker goes into administration Nikon and Canon withdraw from the film scanner market Hard-drive and solid state flash card camcorders are introduced by Canon, JVC, Sony and Panasonic – set to become the future of moving images 8Mp becomes the entry level compact camera for under £100 Entry level digital SLRs like the Nikon D40 sell for £300 or below Interfit introduce “cool lights” to fuel the burgeoning market for website product shot photography Panasonic launches the G1 compact digital SLR system. The 12 Mp 14-45mm lens camera featured 4/3 type sensor but sold for an expensive £599
2009	<ul style="list-style-type: none"> The Secure Digital Extended Capacity (SDXC) format for SD memory cards was unveiled at CES (Consumer Electronics Show). The maximum capacity defined for SDXC cards is 2 TB (2048 GB). We start our digital to film recording service allowing you to print digital images in a darkroom Olympus announces the Pen camera system- a compact digital camera with interchangeable lenses. This idea is shortly to be followed by other manufacturers. FujiFilm announces the EXR sensor for digital cameras. This CCD worked around all the issues of picture recording resolving power, sharpness, sensitivity, noise reduction, and colour reproduction to emulate the way as the human eye functions. Touch screen compact digital cameras like Canon’s SX200 emulate mobile phone use and become set to increase in 2010 The 12Mp Canon EOS 450D becomes the world’s best selling digital SLR after winning Best SLR from TIPA 2008

Our predications for the next 10 years:

- 3D still and moving pictures will become standard in the next 5 years
- Cameras will have more “on-board” processing software that perfects the final image without the need for a computer
- Images to be printed on and saved to wafer-thin electronic paper called e-paper. Recently showcased by LG this flexible, full colour display is the wave of the future, and could be used in so many different products including e-readers.
- Immediate upload of your image once taken to your favourite internet site with Bluetooth connection for cameras