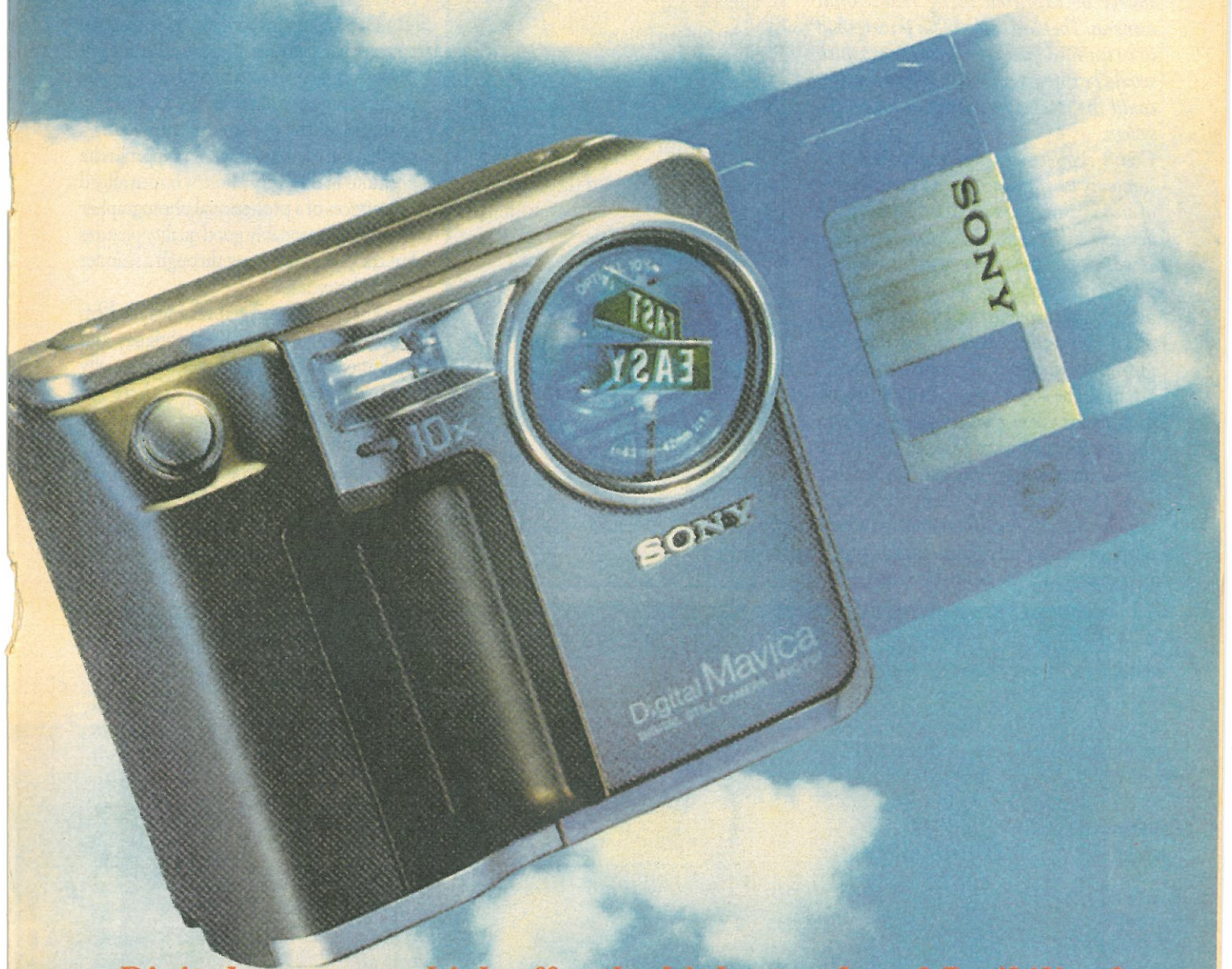


# The Floppy Success



*Digital cameras which offer the highest order of flexibility for online applications have been further simplified to offer better features including 'ease of use', effective transmission of stored images and above all a removable media in the form of floppy disks. This is Sony Digital Mavica floppy camera for you.*

■ G.P. Vinayababu



**Case 1:** A large company developing multimedia titles was confronted with a major problem which made its efforts cost intensive and time consuming. The process of incorporating still pictures in multimedia packages was tedious and inefficient. This was due to the fact that pictures had to be either selected from an already published source or captured using traditional cameras. The hard copies of the pictures had to be scanned later using a scanner which would be interfaced with a PC. Only then could the images be manipulated on the system.

**Case 2:** A professional webpage development company was faced with a similar problem of customising the still pictures to suit the desired needs of webpage development.

**Case 3:** A newspaper photographer was faced with the problem of not being able to publish photographs captured in a distant country of an important event in his next day morning newspaper.

In all the above cases, companies were looking for a device which could perform the function of a traditional camera, a scanner and a storage device all bundled into one. They were also looking for images which could be easily transmitted across telephone lines through Internet or VSAT to be received at the desired location.

### Technical specifications

- ☛ 24-bit (VGA) color resolution
- ☛ Auto exposure
- ☛ 2.5 inch color LCD display viewfinder
- ☛ 1/60 to 1/4000 seconds shutter speeds
- ☛ Auto white balance
- ☛ Built-in flash
- ☛ Up to 500 consecutive shots per Lithium-Ion charge-continuous recording (10-second intervals with flash off).
- ☛ Inexpensive 3.5" floppy disk
- ☛ Up to 40 images per floppy
- ☛ Large 640x480 image size
- ☛ Universal JPEG format

### Cost

Sony Digital Mavica - Rs.40,000/-

Infolithium battery - Rs.5,000/- (approx.)

With the internet concept catching up like wildfire and every other service going online, there is a crying need to provide digital interface to all forms of media- be it graphics, animation or video formats. The greatest advantage one can obtain from digital formats is the ability to manipulate pictures/graphics/movies to the developers'/users' needs.

The normal practice is to choose an appropriate picture either from an already published source or a bromide; scan the picture using a scanner interfaced to a PC; manipulate the picture suitably using a graphic software and insert it at appropriate positions in the page. Those who can afford the services of a professional photographer can obtain reasonably good quality pictures but the process of going through a scanner cannot be avoided.

The pictures and graphics, which form a major portion of the webpages and multimedia software packages are normally scanned and used. However there are numerous problems associated with such an approach like Poor picture clarity, inflexibility of choice and very little room for customisation.

This is where digital cameras make their presence felt. Integrating the superior technologies of both a traditional camera



Sony Digital Mavica with parts identified - front view



## Features of Digital Mavica cameras

### CAMERA

Program Auto Exposure  
Exposure/Iris Control-ISO Rating  
Exposure Compensation (EV)  
White Balance  
Shutter Speed  
Recording Mode  
Picture Effects  
Flash  
Self Timer  
Lens  
35 mm Conversion  
Focusing

### MVC-FD5

Auto only  
100  
7 steps  
Auto  
1/60-1/4000  
20 shots Fine/40  
  
Built-in  
10 sec (on/off)  
Fixed  $f=4.8$ ,  $F=2.0$   
 $f=47$  mm  
Fixed

### MVC-FD7

Auto/5 Mode Setting  
100  
7 steps  
Auto  
1/60-1/4000  
20 shots Fine/40 shots Standard  
4 (Monotone, Sepia, Negative, Pastel)  
Built-in  
10 sec (on/off)  
10:1 Optical Zoom  $f=4.8$ ,  $F=1.8-2.9$   
 $f=40-400$  mm  
Auto/Manual focus dial

### PLAYBACK

Format  
Recording Media  
Image Size  
LCD  
LCD Brightness  
Delete Picture  
Index Viewing  
Time Stamp  
Menu

### JPEG

3.5" floppy disk 2 HD only  
640 x 480 (VGA)  
2.5" 61 K pixels  
Yes (+/-)  
Yes (All/Select)  
6 Picture Display on LCD  
Yes (Date/Time)  
Yes

### JPEG

3.5" floppy disk 2 HD only  
640 x 480 (VGA)  
2.5" 61 K pixels  
Yes (+/-)  
Yes (All/Select)  
6 Picture Display on LCD  
Yes (Date/Time)  
Yes

and the semiconductors, digital cameras offer to eliminate all the interfacing devices like scanners, scanner softwares and associated peripherals. More importantly they offer tremendous flexibility to zero-in on the images which suit the designers' needs.

A digital camera is in fact a perfect blend of the traditional photo camera and the scanner. The digital camera, quite similar to the traditional one has a lens assembly shutter and an aperture.

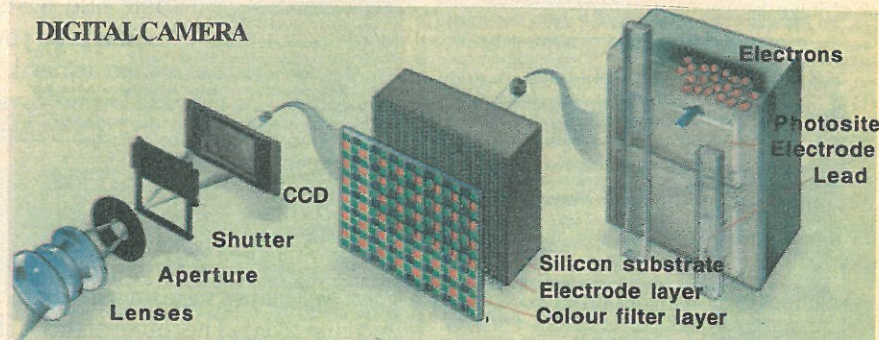
In a traditional camera, the object to be clicked is kept in focus and with the click of the camera, the aperture opens allowing only as much light for an image of the object to be exposed on to the silver halide film. The silver halide film has a peculiar characteristic feature. When light falls on this film, it gets exposed i.e., it gets

decolourised. With the momentary opening of the shutter, the film gets exposed only as much light reflected from the object. The image impressed on the film is a negative which after processing yields the positive bromide of the image.

The digital cameras also work the same way. Instead of a silver halide film, CCD (Charge-Coupled Device) chip is

introduced in a digital camera. The image of the object is captured on the CCD and this is converted from analog to a digital format using an ADC chip (Analog Digital Converter). This digital image is compressed and recorded on to a memory chip which later can be transferred on to a PC.

The crucial part of this whole process is recording and transferring of the images







Sony Digital Mavica with parts identified - rear view

to the PC. The usual process is to transfer the images from the memory chips to the PC using PC cards or a parallel port cable. But there are two major problems with this. The number of images which could be stored on chips are limited and the problem of compatibility creeps in.

But the digital cameras also bring with them their own set of interfacing devices which have to be used to import and work on the digitally captured images onto a PC. Even though this is good for most of the professional business activities, it isn't good enough for universal application.

The latest Sony digital floppy camera has simplified all that. The images here are not recorded on memory chips, but directly on to a universally accepted floppy disk. This eliminates the need for interfacing devices and more importantly the intermediate storage devices.

It required the technological genius of Sony, the worldwide leader in consumer electronics and digital technology to find a solution to this problem. Coupling its proud innovation of magnetic floppy disks (3.5") with the digital handy cam technology, Sony has now brought out Digital Mavica, the floppy camera which has provided solutions to most of the problems associated with its digital predecessors.

While eliminating the use of all interfacing devices, Digital Mavica offers the perfect medium of storage for the captured images which can be easily viewed on a computer screen. With every 3.5" High density floppy disk, one can capture up to 40 normal resolution images. The floppy disk here offers the same kind of flexibility of a normal silver halide film roll which can click up to 40 snaps using an aim and shoot camera. But unlike the traditional film rolls, the 'floppy film roll' doesn't get exposed in open light.

Imagine a situation where you would want to capture the images of your baby and want to have a look at the printed image immediately.

Just use the Digital Floppy camera and within a matter of few minutes you have the printed picture of your kid, in front of you. Besides, you could also have a permanent storage of the image on your computer hard disk for future retrieval.

The features built into Digital Mavica are really amazing while maintaining universality.

#### Features

(i) 3.5" Floppy Disk: The floppy disk is the most well known standardised removable medium today. The choice of this as the

storage medium has provided enormous flexibility to Sony Digital Mavica.

(ii) JPEG format: The images are stored in the form of JPEG (joint photographic expert group) which is the most common still picture compression format. Normally VGA size data images take up approximately 1 MB worth of memory per 1 line of horizontal resolution. At this rate, recording/editing/transmitting images is very time consuming as well as inefficient.

For this reason, most digital still cameras have opted to dilute images in order to reduce overall data load. Through the use of JPEG technology, images that would have normally consumed approx. 1MB worth of data will now take up only 50 kB in Standard mode, and approx. 100 kB in fine mode.

Without JPEG compression, one would be able to record only one image per floppy disk. But through the use of JPEG compression, it is now possible to record up to 40 images in standard mode, and up to 20 images in fine mode.

The relationship between the degree of compression and picture is explained in the following table.

(iii) Auto Macro Function: The Digital



### Relation between degree of compression and picture

| Mode     | Compression Ratio | Data size     | No. of images IFD | Picture quality |
|----------|-------------------|---------------|-------------------|-----------------|
| Fine     | Approx 1/5        | Approx 100 KB | Approx 20         | Good            |
| Standard | Approx 1/10       | Approx 50 KB  | Approx 40         | Normal          |

Mavica camera has incorporated Macro Shooting Capability. Since the MVC-FD7 enables one to shoot images from 1cm away from the lens (the MVC-FD5 allows shooting from 8 cm away), even the smallest shooting objects are able to be recorded.

- ✓ Portrait
- ✓ Landscape
- ✓ Beach and Ski
- ✓ Sports
- ✓ Sunset and Moon

#### Limitations

The digital cameras though better and advantageous in many ways bring with them a lot of limitations. In terms of picture quality digital cameras stand nowhere near the traditional cameras.

If a typical 35mm ordinary film cameras

can capture around 2,200 to 2,600 lines per inch, digital camera can resolve up to 200 to 250 lines per inch. With these major limitations, the newspaper publisher in case three (explained in the introductory paragraph) still cannot publish a clear picture of the image captured in a distant place. Also with the images captured in JPEG format, a lot of details of the picture are lost.

And if the 640x480 pixel format digital picture is manipulated with reference to its dimension, the image will be pixelated. These problems are quite evident in the reproduction of the pictures taken on Sony Digital Mavica (pics. 1, 2 and 3).

Even with all these limitations, Digital cameras would prove an effective tool for the development of software packages and webpages. And the Sony Digital Mavica floppy camera has simplified it further. So 'Shoot, Store and Show' your way to glory.

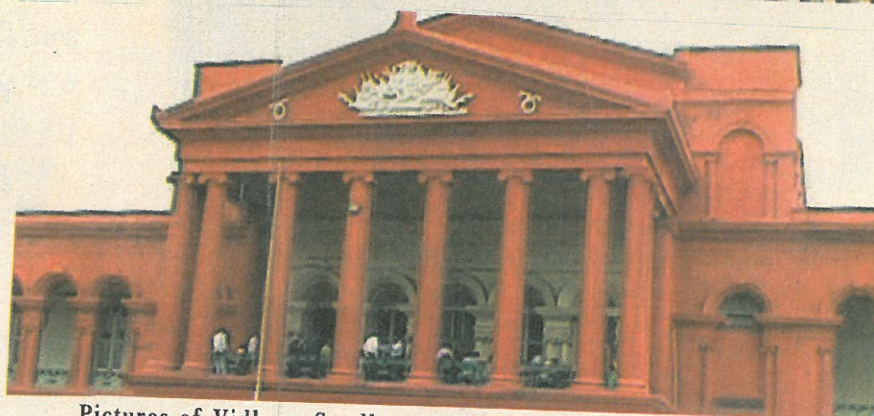
(iv) Index Picture Image: By posting images that have already been taken on a multi-image screen on the LCD panel, the following is made possible:

1. Easy search of desired images
2. Easy selection of desired images to "Protect"
3. Easy selection of desired images to "Delete"

(v) Stamina TM 500 shots: Digital Mavica camera incorporates the same technology as Sony Handycam camcorders, which allow low power consumption. The adoption of high capacity Lithium-Ion battery, allows shooting up to 500 images with one NP-F530. This means that you can shoot images that equal up to 25 floppy disks (fine mode) with one battery, and it is an indispensable feature for worry-free shooting.

(vi) Picture effects: MVC-FD7 features picture effects which add digital effects on shooting images. You can enjoy picture effects without additionally purchasing a paint software.

The Sony Digital Mavica comes with a Digital Still Camera with Real Camera Features like a 10x power zoom lens with 1" macro capabilities and auto-focus, auto-iris and auto-white balance for proper exposure and a built-in-flash and self-timer. Five camera Mode Settings allow control of prevailing light conditions:



Pictures of Vidhana Soudha and Karnataka High Court taken on SONY Digital Mavica