

Market Watch:

DIGITAL IMAGING GRABS THE MICROSCOPY LAB LEAD

By Barbara Foster

Digital image capture and management in the scientific lab? Where there had been reluctance, there is suddenly acceptance. It's as

rise over the past two years has been dramatic, rapidly overpowering technologies in electron (FESEM), confocal, and scanning probe microscopes—which had been holding leadership positions in earlier years. Conducting a simple linear projection on digital's trend through the next three years reveals that it is expected to *double*.

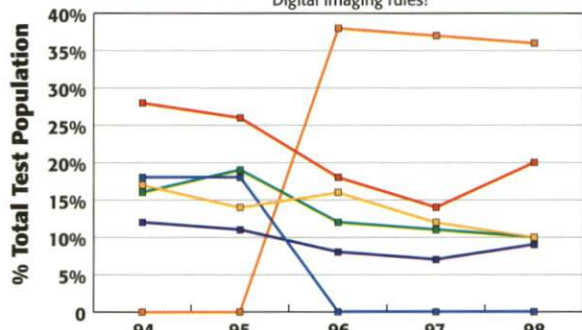
This rise is not unexpected. It is now rare for *any* type of microscope to be sold without electronic imaging accessories. Big

Archiving and documentation follow suit

Trends in both archiving and documentation support the rise of the electronic age in microscopy. Fig. 3 (on page 12) illustrates the dramatic drop in traditional hard-copy archiving and the concomitant rise in the use of computer disk and tape and CD-ROMs. Three-year projections suggest a rise in use of computer disk/tapes to about 45%. Over the same period, CD/DVD-ROM use is expected to head to the 30%-plus range, and hard copy is expected to drop to about 25%. Interestingly, video tape, once thought to be destined as a major archiving medium, has remained in the lower ranks.

Fig. 2 below provides detail on specific types of documentation. Clearly, *both 35mm and instant film are headed downward*. Projections indicate a drop for each to below 10%

Figure 1: Five Year Trend:
Most Exciting New Technologies for Microscopists.
Digital imaging rules!



simple as that—but this dramatic turn calls for some examination!

In a five-year review of data collected at the recent Microscopy & Microanalysis ("M&M") meeting in Atlanta, digital imaging emerged as the aggressive leader in "Most Exciting New Technologies."

M&M is the joint meeting of the Microscopical Society of America (MSA) and the Microbeam Analysis Society (MAS). Its attendees represent an especially good cross-section of the microscopy world: professors to researchers and lab managers; industrial, academic, and government labs; biologists and materials scientists of a variety of descriptions.

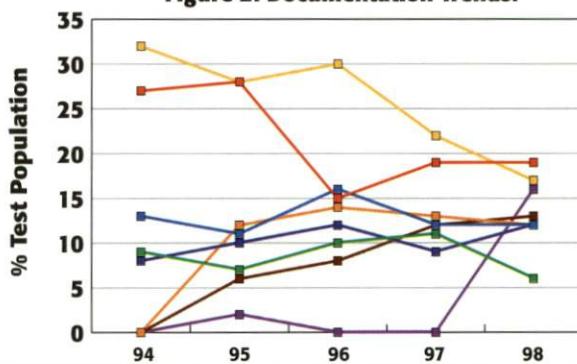
This report is an abstract of eight years of research conducted by Microscopy/Marketing & Education (Springfield, MA), an independent market research firm specializing in the microscopy and imaging industries.

The electronic wave

As seen in Fig. 1 above, digital imaging's

systems, such as the electron microscopes, which typically ran on analog technology, are now fully digital. Older systems can be retrofitted with analog-to-digital converters, with input going to a range of conventional computer systems. Newer technologies such as confocal, scanning probe/atomic force, and scanning white light interferometers are all designed around computer hosts. As a result, it is not good enough to be able to prepare a sample well and image it accurately. Today's microscopists need to be electronically fluent as well.

Figure 2: Documentation Trends.



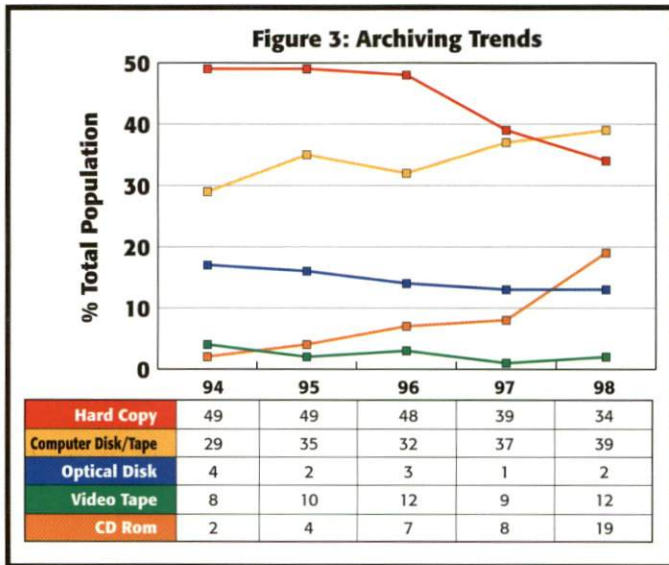
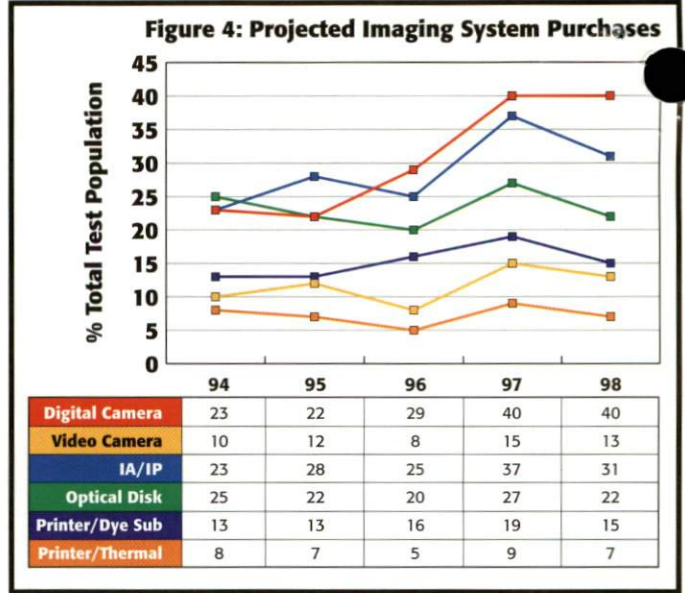
within the next three years. Conversely, digital formats and dye sublimation printers show very positive upward movement, with the former expected to capture about 25% of the market and the latter about 20% of the market by 2001.

Digital camera acquisitions rising to 60% in 2001

Trends on projected imaging system purchases (Fig. 4) closely reflect some of the stronger economic trends in the microscopy arena. The first of these trends was the deepening depression which occurred through the mid-90s, followed by increasing economic health over the past two years. This year's projected purchase data, however, ran counter to the continued economic improvement, as measured by both budgets and staffing, and bears further study.

As expected, digital cameras lead the pack in this division, cited as a prospective purchase by 40% of this year's survey audience. Projecting this trend over the next three years shows that this market is expected to rise to 60%. Second-ranked Image Analysis followed the downward crowd this year, but is still expected to be

on about 30% of shopping lists. Image storage is still an unresolved issue for microscopists, as evidenced by the number and repetition of questions posted to list servers. Optical disks are still seen as important, as seen by their 25% projected purchase rating, but a debate is still raging about seek speed, ease of use, and reliability of Zip drives, Jazz drives, and tape. Although not listed



here, it will be interesting to watch the impact of the new CD-ROM burners on this mix.

From here

The data shows that the digital age is not only here to stay in the microscopy lab, it's aggressively on the rise. New combinations of imaging, text, graphics, and instrument control make the marriage between electron-

ics, software and microscopes of all types not only logical but necessary. Microscopy is finally in the mainstream—digital imaging in all forms of microscopy will continue its aggressive growth to the end of the millennium and well beyond. ■

Barbara Foster, a frequent contributor to *Advanced Imaging*, is President of Microscopy/Marketing & Education (Springfield, MA), a national consortium specializing in customized on-site training in microscopy and imaging; they also provide market research for manufacturers. Ms. Foster is the author of the newly-published "Optimizing Light Microscopy for Biological and Clinical Laboratories." She can be reached at MME at (413) 746-6931, e-mail mme@map.com, or see www.MME-Microscopy.com.