Business

Tech stocks tank

High technology stocks continue their retreat amid reports that growth in some of the hottest areas is slowing and demand in Europe is weak. **C2**

Overtime vs. comp time

US House approves bill that would give wage earners the option of taking time off instead of pay for overtime work. President Clinton has threatened to veto the bill. **C2**

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Peter Manuelian, assistant curator at Boston's Museum of Fine Arts, with some of the museum's sculptures from ancient Egypt.

GLOBE STAFF PHOTO / RIMY TUMAOS

Technology: *Digital archives*

Scanning the past

By Simson L. Garfinkel
GLOBE CORRESPONDENT

MFA Egyptologists race clock to save archeological photographs on computer

DIGITAL IMAGING, desktop publishing, and the Internet are breathing new life into the study of dead Egyptians. But despite the advances of recent years, Egyptologists still find themselves in a race against time to preserve this century's archeological finds for the next.

At Boston's Museum of Fine Arts, assistant curator Peter Manuelian has set himself a daunting task. Between

1902 and 1940, archeologist George Reisner led numerous expeditions from the museum to excavate the Great Pyramids at Giza and 23 other sites. The results are now in the MFA's basement: 60,000 photographs of the finds, images that are quickly deteriorating.

"These are tremendously valuable," says Manuelian, who is overseeing the effort to convert the images into the digital language of 0s and 1s so they can be stored on computers. "Very often, they

will show you things that no longer exist in the world."

The photographs tell the stories behind many of the statues that the museum has on display. "The photos provide the archeological context," he says.

But the images are slipping away: Each is stored on a glass plate, ranging in size from 8-by-10 inches down to 4-by-5 inches. Those plates are easily broken. Many of them are fading as well, thanks
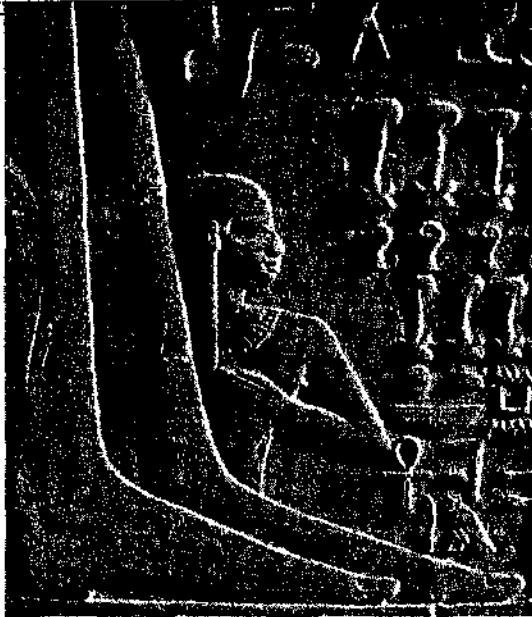
The MFA is working to save photos of its finds.

GLOBE FILE PHOTO

MFA Egyptologists scan past in saving archeological photos

SIMSON SAYS

to a combination of age, bad chemistry, and poor storage conditions at the museum.

Instead of saving the glass plates, the museum has embarked on an ambitious project to digitize the most important ones. Once safely inside a computer, the images can be copied, incorporated into scholarly publications, and made available for direct inspection by the public.

"We can end up with a better result than the original," Manuelian says. "We can correct underexposed and overexposed images. We can take out cracks in the glass."

But the digitizing process isn't easy or cheap. Because the museum won't have a chance to go back and do it a second time, it's important to record all of the information that each negative contains.

"This is not your average table-top scanner," says Manuelian, noting that the resulting files are 20 to 40 megabytes. Although he's looking for another high-quality scanner to make the process go faster, he would rather have funds to send the negatives out to a professional digitizing service (there are several in Boston). Volunteers aren't much help because of the training required to work with the images without harming them.

Computers are also helping to publish the findings, both lowering the costs for typesetting and making the information available to a much broader audience.

For years, Egyptologists were hampered by the hieroglyphics used by the ancients. Working with the picture alphabet was difficult. Over the past 10 years, a number of hieroglyphic fonts have been developed for academia. With these fonts, switching into pictograms is as easy as printing a sentence in italics.

Much of Manuelian's own research involves the study of epigraphy, carefully looking at the ancient writings that were carved on tomb walls. Although those writings are clearly reproduced in many museum photographs, reading those photographs is about as difficult as reading a photograph of a newspaper. To be useful, the text must be transcribed. Manuelian does this by digitizing a photograph, displaying it on the computer's screen, and then tracing the image using programs like Adobe Illustrator and Deneba Canvas. The drawings can be imported directly into a word processor.

Egyptologists are also using virtual reality to bring the ancient world alive. Several universities and museums have developed three-dimensional models of both artifacts and excavation sites. Using sophisticated tools that have become available in recent years, they are making it possible to recreate views of the past.

Meanwhile, a laser survey of Giza ruins and the Sphinx have been carried out. Instead of walking around the ruins, computers can be used to see the ancient world as it might have been seen by those who lived then.

Still, without the Internet, much of this information would be locked away from the public.

Using sophisticated tools that have become available in recent years, they are making it possible to recreate views of the past.

That's because few academic publications on Egyptology have press runs of more than a few hundred copies. As a result, amateurs have had difficulty getting easy access to scholarly work. But with the World Wide Web, a site that's put up for scholarly discourse can be shared by tens of thousands of amateurs without additional cost. The Internet has also made it possible for amateurs to find one another and communicate.

Yahoo, an Internet service, lists literally dozens of sites devoted to Egyptology, including two journals, 12 sites on the Pyramids, five sites featuring hieroglyphics, four sites on the Sphinx, three institutes, and two Egyptological journals. Unfortunately, many of these links appear to be out of date. So here are some links that Manuelian suggests:

Links to most of the relevant Egyptology Web sites may be found at http://www.egyptology.com/reeder/links.html.

Cambridge University has set up a page of Egyptology Resources at http://www.newton.cam.ac.uk/egypt/index.html.

The University of Chicago Oriental Institute is at http://www-oi.uchicago.edu/OI/DEPT/RA/ABZU/ABZU.HTML.

Virtual Reality tours of the Oriental Institute Museum are at http://www-oi.uchicago.edu/OI/MUS/QTVR96/QTVR96 _Image_EG_Menu.html.

The Centre for Computer-aided Egyptological Research, in Utrecht, the Netherlands, has virtual reality panoramas of Egyptian objects; restoration of artifacts by computer; international lists of Egyptologists and Egyptological institutions; hieroglyphic fonts for sale; hieroglyphic dictionary databases; Egyptological news updates; and links to other sites. It is at http://www.ccer.ggl.ruu.nl/ccer/default.html.

Finally, "KMT: A Modern Journal of Ancient Egypt," can be found at http://www.egyptology.com/kmt.

The MFA's own home page can be found at http://www.mfa.org.

People interested in finding out more can contact Peter Manuelian at pmanuelian@mfa.org.

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