



The Times, They Are a-Changin'

By Jeffrey Allen

I first started practicing law in 1973. In the early days of my practice, I primarily did litigation work that required me to work "on the road." I regularly spent days out of my office at depositions, in trial, and in arbitration and administrative hearings. There were a limited number of tools available to facilitate working effectively outside the office. I did have a mobile phone in my car, but (as my children would say) "back in the day," that meant carrying a small radio station in the car trunk that broadcasted and received radio signals on a "party line" for which six stations serviced the entire San Francisco and East Bay areas. You used them by picking up the phone and listening for conversation-if the line was clear, that frequency was available for your call. My most effective "mobile-lawyering" tools in those days were a telephone credit card, a pen, and paper.

Ten years later my practice had evolved toward more transactional work and less litigation. My work often required that I attend meetings and negotiating sessions outside the office. My litigation work continued to demand time out of the office as well. Technology had evolved a bit by then, and we had better office equipment than in the early 1970s. Mobile lawyering, however, had not changed much. My most effective tools remained a telephone credit card, a pen, and paper.

The next several years brought the advent of fax machines, which changed our lives dramatically. Now we could send documents immediately across the city or across the country. The mobile telephone evolved to portable stand-alone phones (the kind that didn't need a car attached to them to function) and analog cellular technology. Computers found their way into smaller offices-we even had portable computers (more like "luggable" at 20 to 25 pounds) sporting several hundred kilobytes of memory and four- or five-inch monochrome screens. West offered online research at least as far back as the 1980s, but it was painfully slow, and very few attorneys used it in the office. Almost no lawyers used it on the road unless they were in someone else's office or a library. The CD-ROM was the next big research development, but most portable computers didn't have CD-ROM readers yet, so they generally did not leave the office.

Cellular technology offered the hope of some privacy in mobile telephone communications (although the popularity of radio scanners later made that possibility more difficult to realize). The fact that you could get portable mobile phones (battery-powered phones you could carry as opposed to mount in your car) made them more useful. But the portable fax machine became my most useful mobile-lawyering tool in those days, even though the pad and pen still remained high on the list, along with the telephone credit card.

By the late 1980s and early 1990s, the evolution of portable computers from 25-pound luggables to eight or 12 pounds of immensely powerful equipment revolutionized mobile lawyering. Now the laptop computer was a truly portable, highly useful, multifunctional tool. Computers with CD-ROM readers enabled attorneys to take research libraries with them on the road. New telecommunications technology allowed portable computers to serve double duty as fax machines as well. Portable telephones became more popular and less expensive. I still used a pen and paper a lot, but the portable computer and the portable phone had become my most effective and useful mobile-lawyering tools.

I now had the ability to prepare and transmit complete documents while on the road, to receive documents from others while traveling, to do legal research without a library, and to communicate with my office and my clients while in my car, with some expectation of privacy (and using reasonable caution about what was said). The last ten years have seen truly dramatic changes in technology that have significantly impacted our practices in and out of the office. More and more attorneys have gone mobile as a result of both necessity and opportunity. Developing at breakneck speed, each technological evolution has served as a precursor for the next, and each generation has replaced itself faster than the last.

The introduction of digital phone technology, replacing analog, made cell phones less expensive, more popular, and better protected against eavesdropping. Three- and four-pound computers, lightweights with a massively powerful punch, found their way to the marketplace and quickly became an essential, perhaps the essential, tool in a mobile lawyer's arsenal. Handheld PDAs, now more powerful than the huge, early computers, became ubiquitous.

The continued advancement of computer telecommunications capabilities has allowed easy access to online research facilities that have evolved into efficient and indispensable tools. Readily available to the road warrior from hotel rooms, home, or any place with telephone service, these resources are a daily part of the mobile lawyer's arsenal. E-mail rapidly evolved from a curiosity to a communications mainstay, largely replacing the fax machine by transmitting copies of documents and information as attachments. Wireless technology now allows e-mail transmittal on the road, without requiring connection to a hard-wired telephone. It also allows us to do legal research on the run.

Fax machines, although still useful, have started the march toward the white elephant graveyard. As scanners become more common, the last remaining utility of the fax machine-the ability to transmit images of executed documents and documents not generated by a computer-will disappear, and fax machines will go the way of carbon paper and mag-card word processors.

Technology begets more and better technology. The more our technology evolves, the better it gets. The better it gets, the faster it evolves. That cycle is firmly established in our society. It affects all aspects of our lives, including our law practices. This has created greater opportunities for attorneys to practice in settings other than traditional bricks-and-mortar environments. As a result, more lawyers will become "mobile" simply because they

can, working more efficiently and assisted by newer, more compact, and more powerful tools. Let's take a look at the immediately foreseeable future:

Computers and Related Considerations

Computers will continue to become faster, more powerful, and much more portable. Until now, the need for a monitor and a usable keyboard has substantially limited the minimum size of computers (and, to an extent, the weight). Without the requirement of a screen and keyboard, computers will take far less size and weight. Working prototypes of virtual keyboards have already made it to trade show floors. Sensors attached to the user's fingers transmit information to the computer about how the fingers move through the air as they type on an unseen keyboard. Future development of this technology will eliminate the keyboard from the portable computer, producing an even smaller package. This new generation of portables will work with the virtual keyboard or a physical keyboard wherever the lawyer wants to use them. Voice recognition technology is coming of age and also will permit inputting data without physical or virtual keyboards.

Technology already exists that allows a user to wear special glasses that render images visible only to the user. Such a tool will almost guarantee privacy for lawyers working on confidential documents in public places. Replacing the screen with viewing glasses will produce even smaller and lighter laptops, most of which will interface with larger office or home computers.

Permanent memory storage presents the last hurdle to the truly pocket-sized full-power computer. But the development of flash memory and larger capacity hard disks in ever-smaller packages will make CD- and DVD-ROMs expendable as well. Soon, content that now comes on discs will be offered on small cards that take up virtually no room and slide into slots in the computer (similar to those used by the Palm 500 series PDA or the increasing number of devices that accept the Sony Memory Stick). This will eliminate the need for DVD, CD, and combination drives in most laptops. Of course, these pocket computers also will have writing capabilities in addition to reading options.

These pocket-sized computers will work faster and better than your current desktop equipment.

Convergence

The "Age of Convergence" is upon us. Technological convergence is simply the equivalent of the Latin phrase *e pluribus unum* (from many, one). It includes combination cell phone/pagers, PDA/pagers, and now even PDA/cell phone/pager. Sony recently introduced a combination PDA/camera/MP3 player as its Clie PEG-NR70V. It has been out only a few months and the price has already dropped significantly.

Convergence will continue. Eventually, one device will combine a computer, pager, PDA, camera, and mobile telecommunications device. Like current PDAs, it will accept modules to provide additional capabilities such as a global positioning systems or even scanners. Making music, movies, and software available on flash memory cards or equivalent technology will also enable the device to replace a CD/DVD player.

Communications

Communications technology will continue to improve. Wireless communications will evolve at two levels. Bluetooth and later generations of wireless short-distance connectors will allow pocket computers to print and share network resources without hard-wired connections. The virtual keyboard and monitor glasses discussed above will also use wireless connectivity, increasing the convenience of the converged pocket computer. Wireless connectivity for longer distances will also improve, allowing faster Internet connections for e-mail, legal research, and general web surfing. These devices also will receive television and radio broadcasts both from traditional sources and the Internet. As wireless technology improves, connections will cover not only the United States but also the rest of the world. In that seamless global web, dropped calls and lost connections will fade into memories of the past, much like rotary telephones. We stand at the threshold of an era of mobility. More and more attorneys will work outside the office, at least part of the time. In the very near future, technology and its advances will enable us to work effectively and efficiently from anywhere and at almost any time.

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