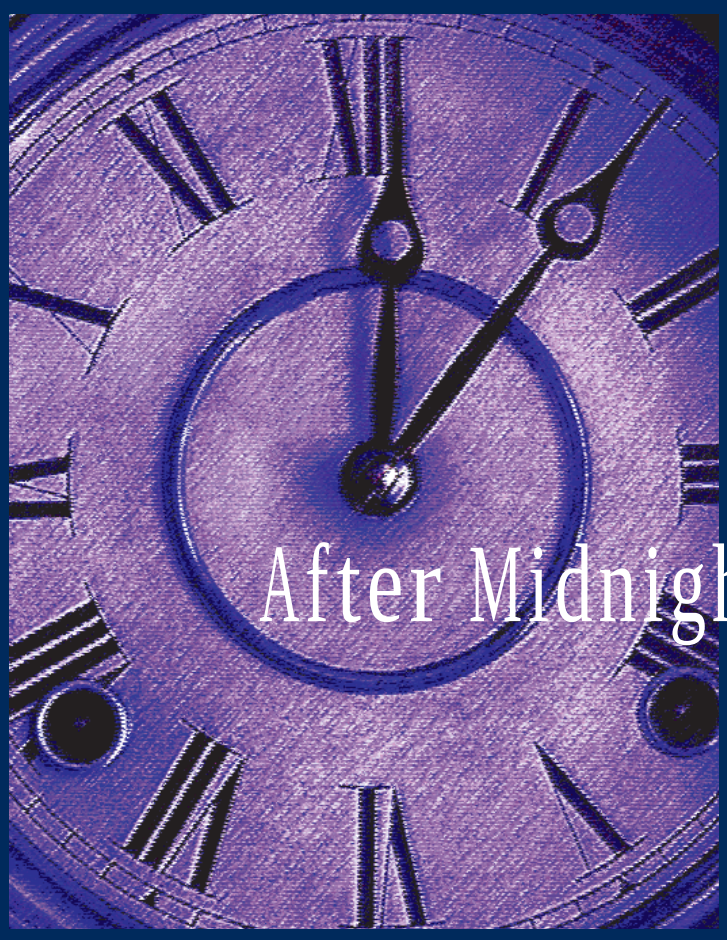


After Midnight The New Age

BY JOHN HARRISON

Shortly after midnight on the morning of January 1, 2000, I and many others who are pioneers in the world of “smart home control” will, of necessity, perform a cold reboot of our systems. For those of us who use a computer to command our lights, coffee makers, heating and air conditioning, and security and home entertainment systems, this will be a relatively easy task: We’ll simply press a few buttons to change the time and date. Nothing to it — assuming, of course, that over the past year the electrical power companies have performed their upgrades as they have assured us they have and that the so-called Year 2000 bug is a small, harmless creature long since tamed.

On that historic morning there will, however, be a need for someone to check on the function of a few other items. We’ll assume that the Social Security and national air-traffic control systems will perform as promised. We’ll hope checks arrive on time, that traffic lights function, that elevators won’t get stuck, that paychecks are mailed for the correct amounts and that anything moving on the ground or in the air won’t suddenly come to a screeching halt.

But by that January day, that first day of a new year, in a new century, in a new millennium, we will know that we are in a new age. Call it what you will: the Oh-Ohs, the Zeros, the Noughts or (to borrow from the British) the Zeds, there will be a clearer demarcation between where we are now and where we will be. There are no signs the rate of change in adoption of telecommunications technology is slowing. If anything, rates of “telecomputing” adoption are accelerating, as more and better procedures and gadgets are devised and, literally, plugged in.

Fast And Furious

Consider where we are now. Prototypes are already being tested in which your grocery bill is being tabulated as you place items in your shopping cart. This information will simply be added to the vast amounts of data that are already being compiled on each and every one of us. The mechanisms used to gather consumer information encompass such items as video checkout and discount grocery cards. Even now, our reading and listening habits are being analyzed as we order items through various forms of e-commerce on the Internet. Devices presently in production will someday allow your grocery store to reorder and eventually deliver "just in time" merchandise to restock not only their shelves but your cabinets as well.

Recently, Compaq, Microsoft and Intel joined six of the regional Bell Systems in a pact to deliver asynchronous digital subscriber lines (ADSL) via existing copper lines. This is accomplished by way of a certain kind of modem and computer protocol that will allow us to maintain both a telephone and data connection without having two lines.

The hottest new items at the recent Consumer Electronic Show were the Audible and the Rio, small handheld gadgets associated with the spoken word, audio books and CD-quality music. In both cases there were no moving parts, and the devices came with the ability to deliver material in the range of up to seven hours. These items, along with digital cameras, have captured the imagination of potential users and will see further development over the next few months.

Data transmission rates over the Internet are bound to improve. Audio and video will get better as the compression gets better. This is not "pie in the sky." It's happening in some areas today and may, in fact, be universally implemented within the year. The Baby Bells have said they already have the necessary infrastructure. At the same time, cable companies are promising to deliver the same quality of cable television service via a cable modem that a coaxial cable delivers to homes, schools and universities.

Utility companies are another key player in this game. Wiring in many homes incorporates a piece of fiber combined with the third wire of electrical circuits. This wire was originally proposed as a means of handling a data signal in order to monitor household appliances and to contact the service manufacturer if an appliance failed. But that same third wire can now be used for video or data or phone conversations.

One of these services — phone, cable or utility — is going to provide high-speed connectivity. In the context of deregulation of phones and cable, it will be possible to get local phone service, long distance service, TV and Internet service from the same provider. Customers will subscribe to whatever company brings the service most quickly and cheaply.

The Role Of Education

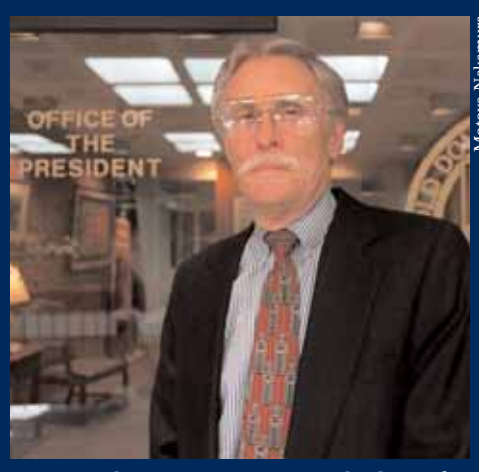
How do these advances affect the university community at large? New applications will follow, once there is the bandwidth to really make use of them. Technology has evolved to the point, however, that one may possibly consider a few totally new approaches to the delivery methods. Education, or the process by which information is passed formally from one generation of scholars to the next, has seen little evolution in technique over the past few hundred years.

What we're going to have with the new technology is the ability to actually see smooth audio and video interaction. Internet-connected individuals will be able to take full advantage of the real and implied resources of the virtual classroom. Students in the workplace or at home will be liberated from the requirements of place and the limitations of traditional instruction: lack of comprehensive supporting materials, first-tier instructors and so forth.

Over the past year much discussion has taken place in academic circles as to the possibility of delivering academic material in a truly asynchronous fashion. This approach would utilize the Internet and, more specifically, the World Wide Web. In effect, a student works at his or her pace, accessing course work as desired. The great advantage of this approach is, of course, the ability of an instructor to add to the material available to the student from the wide resources of the Web. Students could also be visible to the instructor as well as to other students, both in the classroom and at their contact sites, by means of video connectivity through the Internet. Old Dominion's Interactive Remote Instruction (IRI) project is one example; other universities are also planning or implementing similar efforts.

This approach, however, is not unlike the use of video tapes of classes that in the past were mailed to students. In these cases the student watched the tapes and completed the assignments at their own pace. The difficulty with this approach is that, as past experience has demonstrated, the student must be highly motivated and diligent to stay current in completing the course material. Many students begin such a course of study but the overall success rate indicates that a large percentage of these students fail to complete the prescribed work.

Even so, free from the traditional restrictions of time and place, education will reap the benefits of the evolving technologies and evolve itself. As educators learn to use these new technologies, the practice of educating a new generation will change, and the possibility of true lifelong learning will become a reality as we transition into the 21st century.



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