OBSOLESCENCE

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ACCESS *by Design*

TECHNOLOGY IN SERVICE TO COMMUNITY

Obsolescence

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"If I buy this now, will it be out of date in six months?"
—Community group member

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Obsolescence concerns almost everyone involved with or interested in technology. Consumers worry that if they buy something now, something better and cheaper will come out tomorrow. Industry worries whether people will buy current products or if they will wait. Users worry that every time they get to the point of being able to use the technology, something new will appear that they don't understand. And advocates worry that poor people will get out-of-date technology or none at all. Even with declining prices, the purchase of technology is a major investment for most people, especially people with low incomes, and the idea that the results of that investment may quickly become obsolete discourages people from purchasing technology.

While people are concerned about wasting their money, the key obsolescence issue is information, or more accurately, the lack of information. A computer with very little memory may indeed be obsolete and need to be replaced, or it may just be in need of a relatively inexpensive memory upgrade. Too often the difference between an obsolete machine and one that can be upgraded is not price but rather the initial configuration of the machine and the knowledge base of the purchaser. Purchasers need to know if a machine can be upgraded before they buy it. And when the time comes to upgrade, they need to know how to install additional memory or other upgrades, or how to find someone who can do it for them.

Too often community organizations don't have access to this necessary technical knowledge. Nor do they have the assistance to help them judge if something is really obsolete, if it just needs a quick fix, or if it is actually fine the way it is. So while they worry that replacing technology costs time and resources that they may not have, they also fear they will be at a disadvantage

without the most recent technology. They balance distress about being out of date with budget insufficiencies and wonder where it will all end.

Developers are well aware of concerns about obsolescence and are making efforts to address them, including:

- *Ensuring backwards compatibility.* When an upgraded version of a software program comes out it should still be able to read files from earlier versions. Thus, for example the organization with the most recent version of the word-processing software Microsoft® Word can still read files from earlier versions of Microsoft® Word and, if they choose, can save their Microsoft® Word files so that they can be read by users with earlier versions of the software.

- *Increasing forward compatibility.* While most major software programs are backward compatible, they are not "forward" compatible. That is, while the new software can read files created under the old software, the reverse is not true: the old software cannot read "regular" files saved under the new software. This is beginning to change. For example, Microsoft® provides users with access to software that allows Word 6.0 to read Word 7.0 files. This software is available at no cost on the Microsoft website. However, users need a pretty strong knowledge base to know that the software is available and how to load it in their system.

- *Increasing the importability/exportability of files.* Software programs can often read files from similar programs. For example, Microsoft® Word can read files from ClarisWorks® and other word processors as well as from generic files such as text files. Microsoft® Word can save files so other word-processing software programs can read them. This is the case for other types of software programs as well, including spreadsheets and databases. Some software manufacturers, however, have chosen not to allow their software to read files from other software, so it is important to check. There are also software utility programs that make it easier for software to read files created by other software.

- *Increasing hardware compatibility.* When videocassette recorders first came out there were two incompatible systems, Beta and VHS. Because consumers didn't want to get stuck with an obsolete system incompatible with commercial videos, sales didn't take off until one system dominated the market (VHS), although many manufacturers made the recorders. There has been a similar move toward one dominant system in computers.

- *Developing more upgrades.* Computer companies and suppliers have made it easier to replace hard drives and disk drives and to add memory, audio, and almost anything else to computers. You do, however, need to know what you want, how to install it, and if there are problems, what to do about them.

- *Offering leasing and trade-ins.* One computer manufacturer is offering plans such that for a monthly fee people can have a computer and Internet access and in two years trade the computer in on a new model. Based on current costs, however, this tends not to be a cost-effective way to update hardware.

In summary, community organizations are asking if their technology will remain "cutting edge" and able to run new software, while developers are responding "yes," but only if "you know this" or "you can install that" or "you know how to troubleshoot if such-and-such happens." With the caveat that everything changes and advice too becomes obsolete, there are some things that can be done to forestall obsolescence:

1. **Before you buy either hardware or software, know what software you are going to need.** Go to your local library and get on the Internet (most libraries now have Internet access). If you are interested in a specific software package or computer, check for online product reviews. Also go to the manufacturer's website. There you can find out what different models can do, and most manufacturers have demos or even sample software that you can download.

2. **Before you buy software, see what comes with the computer.** All computers come with some software already installed. When you're buying new equipment, check to make sure the software that comes with the computer is the software you want.

3. **If your existing software isn't meeting your needs, consider upgrading it rather than buying new software.** Upgrading existing software is a lot cheaper (sometimes free) than buying new software. Check with the manufacturer of your old software to see if you can use an upgrade rather than buying a new piece of software. Try out both new software and possible upgrades to see if they will do what you want. Almost all cities and some towns have cyber cafés (coffee shops with computers). Go to one, get some coffee, and sit down and learn. Most of the cafés have lots of software and people who will help you.

4. **Buy technology that is upgradable.** You may need advice to do this: one way is to ask the computer teacher from your local high school about the types of computers that can be upgraded. He or she may also be willing to help you with upgrades or know someone else who will.

5. **Don't throw away your old computers.** Parts of the computer, such as network cards, modem cards, keyboards, memory chips, and monitors can be used on different computers. Bring a list of all the pieces of your old computer with you when go to purchase a new one and see what can be transferred.

6. **Check the compatibility of "peripherals" like printers, videocameras, scanners, and sound cards before you buy them.** Not only do you want the peripherals to work in the computer system in which you are putting them, you want them to be able to work in some of your other systems too. Then if the original system breaks or is replaced, you still can use the peripherals.

You need to decide what obsolescence means for you. If the computer or other piece of technology continues to do what you want it to do, it isn't obsolete, no matter what new item is available. Decide what is "good enough for you." For example, your computer may be obsolete if you want to create a website with animation and databases, but not if you are happy with a website that consists of text and pictures.

Technological development is not going to stop, and obsolescence will continue to be an issue. Since information is key to dealing with obsolescence, how much can the individual consumer or community organization reasonably be expected to know? Both communities and industry have a role in addressing this question, and it is the shared responsibility of industry and government to ensure that the necessary knowledge is readily available, easily understood, and able to be used.

About Access by Design

In 1996, Education Development Center, Inc./Center for Children and Technology, the American Association for the Advancement of Science, and Campbell-Kibler Associates, Inc., began a research and action project about the equity issues in technology. We conducted interviews with community leaders and organizations in more than 50 places across the country, in small and large cities, in rural areas and Indian reservations, with people from a range of ethnic, language, class, and racial groups. We spoke with people with disabilities and disability rights advocates, representatives from industry, community leaders and activists, youth workers and educators, funders and policymakers. We worked closely with a number of community-based and national organizations to examine the issues related to technology access, including how technology is designed and how well—or poorly—it serves diverse communities. Our partners included the Progressive Baptist Church in New Orleans, the Rhode Island Indian Council, El Puente in Williamsburg, Brooklyn, the Oyotunji African Village in South Carolina, the Accommodation Resource Center at the University of Nebraska–Lincoln, the Young Scientists Club in East Harlem, New York, the Collaborative Visualization (Co-Vis) project of Northwestern University and their afterschool career program at the Kelly High School in Chicago, and the Innovation Center for Community and Youth Development of the National 4-H Council.

The work began much earlier, however, among educators and activists in a variety of settings, including the Center for Children and Technology (CCT), established in 1980 at Bank Street College of Education and now part of Education Development Center. In pursuing how the new computer technologies could best support teaching and learning, researchers at CCT became aware of inequities in access and decisions about design that favored some groups over others, noticing first the gender issues and subsequently race and disability concerns. Yet even by 1996, relatively little attention and few resources were being dedicated to these concerns.

Access by Design was an attempt to gather together educators, activists, policymakers, and industry representatives to build awareness and action for increased equity and diversity in technology.

The products from this effort include materials for community leaders and organizations, as well as a report and action agenda based on the interviews, meetings, and policy efforts conducted from 1996 through the beginning of 2000.