Little Meaning in New Equipment Without Prepared People

Gail McClure

One of the greatest pains to human nature is the pain of a new idea.

Walter Bagehot

Three years ago I proposed that the Agricultural Extension Service buy word-processing equipment that would interface with a new computerized typesetting system at the Printing and Graphics Department. At the time I was a true believer. Our typesetting methods were obsolete and expensive; the computer would and could save us. All we had to do was develop a rational approach to implementing the system and involvement of faculty and staff who were hostile and skeptical.

Now, our system works according to theory; and we can document "success." But I have little enthusiasm left. I am weary of enthusiasm, weary of being positive, weary of the feeling that in terms of efficiency we may have lost ground, not gained it. Most of all I am weary because I am tired of ignoring basic reality. I have lost my conviction that the computer will save us, yet I fear slipping off an abyss into absolute skepticism. So I have become a computer agnostic—a decent doubting Thomas—one who basically wants to believe but respectfully and rigorously questions banal assumptions.

Despite my change in attitude, my basic objective continues to be the implementation of an effective, efficient typesetting system. But now I want a system that acknowledges and responds to the human frustrations, problems and associated stresses. These are as real as the platter disc absorbing all the bits and bites of information we feed it.

In Minnesota we have a CPT word-processing machine and operator. When editors have finished with a manuscript, the operator takes the edited version and enters it on the

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CPT which stores the text on a cassette or disc. At this point the operator enters much of the basic coding for the computer indentation, paragraphing and the like. Then detailed mark-up is done on the printed copy. (The passive construction is appropriate in that no one wants responsibility for the laborious mark-up. Unfortunately, the programmers have not devised a solution that effectively distinguishes between an aesthetic decision and a mechanical one.) After mark-up is complete, we send the manuscript to printing and their Imlac composer. The disc drive on the Imlac feeds the impulses on the tape or disc to their Mergenthaler VIP—and voila. We get galley proofs; corrections are made on the Imlac; we generate hard copy, and we are ready for paste up.

If everything goes well, we save time and money. A page of type that used to cost $40 can now be had for $25. A page that used to cost $25 runs us about $17. We really come out ahead on the annual revisions, the bulletins like *Cultural and Chemical Weed Control.* With the text stored on the computer, we simply treat the revisions as corrections and avoid keystroking the entire manuscript. It is quicker and more accurate, and when the system works like this we are proud to admit that we are innovators.

If things do not go well, we lose time and money. Sometimes lots of it. In addition to the machine and the operator, we have hired a full-time proofreader who helps mark-up and handle copy. Scheduling and management needs have increased dramatically—staff has not. We have no backup operator, and a good one is hard to find. The problems of efficient operation are mainly ours. The print shop now bills everything out as time and material. If we do not give them properly coded and marked copy, the bill immediately shows it. In addition, some of our jobs simply do not need the elaborate typesetting mechanisms we have established. For the simple, one-time projects of moderate length, a less sophisticated system would be more practical.

The major deterrent to our innovation is people. Maybe unions can tell members to retrain to a new technology and provide sufficient incentive to do so, but dictating objectives in a university environment is difficult. The computerized typesetting process we have established works well if all people perform their functions efficiently. So far, we are not operating as efficiently as the machinery. Consequently I have come to resent simplistic technical approaches that look solely at what machinery can do without regard to what

the people involved can or will do.

The best systems have to set aside "computerese" and logic long enough to address the human aspects of technical innovations or any achievements are short lived. Unless people are emotionally prepared and intellectually equipped to handle the hardware, the purchase has little meaning. It becomes an expensive toy for a few "enlightened" souls and not an efficient system.

I am not going to lapse into cynicism here. We intend to forge ahead, but with less enthusiasm and more caution. Currently, I am writing a proposal for a CPT 8000 with a dual head print-out along with a Typereader 2. The brochure tells me the typereader "is a marvel of electronic engineering. A machine that reads." Wonderful. But I am not going to deify it just because it has the potential for eliminating needless duplication. We want to be sure it can "read" for us.

When we bought our original system, we naively assumed that once we informed departments of the typesetting potential with the word processor, they would leap at the chance to purchase similar equipment. We could then eliminate one keyboard operation, and the scientists could bring us their manuscripts on tape or disc and we could edit and insert codes.

We waged a brief campaign trying to urge some consistency in equipment purchases. Extension even tried to offer financial incentives to encourage departments to purchase compatible equipment. We were politely but firmly told to butt out of departmental business. Consequently, we continued to receive manuscripts typed on every brand of equipment imaginable.

Similarly, the potential of the Typereader 2 on the CPT 8000 will not be maximized without cooperation. If each department buys a special font (which can be used on any standard typewriter) all manuscripts could come to us typed on that font. Then the typereader could scan the copy without key stroking and within seconds feed the characters directly into the word-processing storage system for editing and subsequent print out.

However, before I submit the proposal for that equipment, I am going to re-read Rogers and Shoemaker on diffusion of innovations. Before we get the hardware, we need a strategy which addresses the real problem—persuading department heads and secretaries that manuscripts should be typed using a consistent font. We need people who want to use a $20 piece of equipment, so our $10,000 piece of equip-

ment will not just sit there. I do not want that on my conscience.

So we may not be the first to have the Typereader 2. However, I hope that when we get one, we can point with pride at the people using the system. Hopefully, the effects will be so desirable that we are not just saving time and money, we are working in a more cooperative, healthy environment. Our goal is to accept the realities of the situation, not fight them. We hope to learn to introduce innovation in a way that allows for an ideal rate of change.