Technological Implementations and Ethical Failures

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ABSTRACT

LIBRARIANS HAVE ALWAYS FAVORED TECHNOLOGICAL INNOVATION, but the implementation of these devices and systems costs money that otherwise might have been spent on materials. Once in place, the technology alters the ways in which we interact with data and information, and this often results in problems including charges, hacking and cracking, lack of information integrity, inappropriate e-mail, cheating, plagiarism, pornography, and so on. Ethical sensitization is touted as a way of solving these problems, but sometimes it is an inadequate solution.

INTRODUCTION

As new forms of information technology (IT) have become available, libraries and information centers have eagerly embraced and adopted them; telephones, copiers, microforms, online searching, automated circulation and acquisition systems, COM reader/printers, CD-ROM networks, end-user online access, fax delivery, e-mail, Internet databases, and other devices are integral parts of librarianship. Information delivery is enhanced, and users are pleased with the efficient results. But each of these implementations costs money, and the funds that otherwise might have gone to purchase traditional materials are diverted to expensive systems or to nondivisible packages of databases or to a single publishers' entire run of online serials, many of which are inappropriate for a given institution. And because businesses are confused by bottom lines, they often egregiously overcharge for their products and force purchasers or leasers to

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agree to unreasonable self-serving contracts. Administrators who must make budgetary decisions are placed in a difficult position but invariably opt for a technological solution, because they do not wish to appear to be reactionaries or Luddities and because they want to make every applicable resource available to their clientele. At Harvard or the University of California, where money is abundant, this is not as problematic as it is at a small liberal arts college or a poorly funded state institution. Independent information brokers or corporate librarians can simply amortize costs by passing them along to purchasers of either information or manufactured products. The primary way in which a public university library can increase its budget is through legislative mandate, and since legislators are notoriously mercurial, the fat years alternate with the lean and collections, instructors, and students prosper or suffer accordingly.

CONVENIENCE

Technology has changed the ways in which we create, store, and access data and information so dramatically that a real qualitative difference emerges. But, surprisingly, when one carefully analyzes the derived advantages of IT, the difference frequently boils down to mere convenience (which should certainly not be derided). If the same thing can be accomplished inconveniently and laboriously, funding might be better spent elsewhere, despite dissatisfied users who would have to come to the library, search through indexes or bibliographies, seek out materials, and make photocopies rather than have their home computers spew out not just citations, but the actual documents, with direct links to other appropriate materials. Instead of flying off to the Beinecke, the Folger, or the Bodleian, one can instead virtually fondle the manuscript or artifact on the institution's Web site. To be fair, it should be noted that there are some technological implementations that offer possibilities unimaginable in other contexts: the vast quantities of (sometimes misleading or false) material available on the World Wide Web, the swift communication system provided by e-mail, and the manipulative ability of a software package such as the *Oxford English Dictionary*, which allows one to request all words that derive etymologically from, say, Japanese. The complete list would be generated in a few moments, whereas it would take a manual searcher years of painstaking culling to develop a similar but deficient compilation. Despite the beneficial advantages of IT, I wish to argue that an unthinking embrace of technological solutions is ethically unacceptable since it limits funding in other areas—e.g., purchases for serials, monographs, and special collections.

The more convenient technology becomes, the more exacerbated are the problems. Academic institutions now must cope with harassing e-mail messages, student online entrepreneurs, and various forms of cheating. Ubiquitous access to the World Wide Web on any one of hundreds of

library computers means that an occasional patron will purposely call up a controversial site in order to do legitimate research, to satisfy curiosity, or to annoy others. Since the evaluation of the worth or social appropriateness of material does not fall within the legitimate purview of academic information providers, it is impossible to effectively cope with this problem.

For example, a student working on a paper, thesis, or dissertation that deals with information contained on pornographic or Holocaust denial Web sites has every right to access them. Most serious scholars will do this in private or in a circumspect, nonconfrontational way. But those students who thrive on controversy may purposely call up an offensive site, leave it on the screen, and move away from the terminal. Naturally, the next user may be offended by the text or images. Ethical precepts do not help control a 14 year old with a malicious bent, but neither do they help if one's president, dean, or director demands the installation of filtering software since censorship, in any form, is unacceptable.

MAJOR PROBLEMS

The academic library today is extremely dependent on its computer systems. Different facilities, naturally, have different configurations, but virtually all American institutions of higher education now offer end-user access to CD-ROM databases or to those that use the Internet as a telecommunications conduit. Administrators may choose a full-text service and cancel both the hard copy indexes and journals that it has replaced; and thus, patrons not only come to depend on the new system, they now have no recourse should the database become unavailable. Despite the good intentions here, this amounts to logistical suicide, and as such must be considered unethical. Four simple but inevitable nightmares present themselves: either the institution's servers can crash or the Internet can have some technical problem or the provider's servers may overload or, most inconveniently, the company may go out of business. Then not only will there be no immediate access, but all retrospective materials (which, in many cases, are chronologically limited to the latest decade or so), will be expunged. This may not be of great concern at a smaller school, since its patrons can resort to interlibrary loan, but if hard copies exist only at a few major repositories, we will have greatly hindered our scholarly progeny.

Related to this is the dependence on full-text documents that such systems foster. No one, not even a serious scholar, will be willing to waste time tracking down hard copy or microformats when the same material is available at one's office or home terminal. For the less sophisticated freshman or sophomore who is instructed to locate one or two articles that fall within certain parameters, it is easy to mentally eliminate those pertinent papers that do not appear textually on the screen. There is, of course,

nothing wrong with this at the lower undergraduate level, but habituating themselves to this form of instant gratification will take its toll when these same students reach graduate school. There they will require more esoteric materials not available in full text but will balk at the inconvenience of ferreting them out, since they have never had to do this during the previous sixteen years. Making do with the material that comes up on the screen or settling for an abstract in lieu of the complete article results in intellectual limitation or epistemological fragmentation.

A third major flaw inherent in electronic information delivery is the unacceptable quantities of ostensibly germane items that appear. Even databases limited to very precise disciplines yield astronomical numbers of hits when one does a general search. Many Web search engines produce tens of thousands of results, most of which may have nothing to do with the topic (either because the search is too broad, the searcher does not understand the engine, or the engine itself cannot distinguish among the variously similar fields, items, terms, or requirements). Many social critics have commented on information overload, but it is especially devastating to unsophisticated or unknowledgeable students, since they have nothing against which to judge, no way to evaluate the farrago of essays, articles, home pages, data, and information that bombard them. They choose what is at hand; they have other things to do.

A final problem results from the need to offset the extraordinary cost of computer hardware, software, and database subscriptions by implementing various charges. Academic institutions often tax students with an activity fee, some of which may go to subsidize computer facilities that are scattered around campus. Some labs and more publicly available reference equipment may be burdened with user or printing fees. Since the library profession theoretically condemns charging for information on the grounds that many colleges and universities are supported by tax dollars, and since students already have paid tuition and other costs, additional charging is unwarranted. But no administrator is going to voluntarily cut off this generous source of income, which may make the difference between continuing to use antiquated or failing equipment and being able to purchase new terminals and printers on an ongoing basis.

EXTERNAL THREATS

Computers can be externally manipulated to record and forward data that the user may wish to protect. Many of the social problems concerning privacy encroachments are only of passing concern in the present context, but academic administrators who may decide to monitor library or personal computers located in dormitories, offices, or homes do present a challenge.The reasons for such monitoring increase as the social infrastructure degenerates. In times of paranoia, crisis, terrorist activity, or war, those in power may wish to make certain that students (and others) are

behaving. What could be easier than monitoring the college's or university's servers for unacceptable communications. That such activity is unethical, stifling, and a threat to intellectual freedom is of little concern to those with what they believe to be a positive agenda.

Cracking (malicious hacking) is perhaps the most fearsome threat to both individuals and the organization. Viruses, worms, Trojan horses, and other malicious programs can distort, harm, or destroy data, information, and software. A single autonomous individual anywhere on earth can render useless millions of computers and systems. Or a cracker can target the servers of a specific institution, attempt to extort payment and, when that fails, destroy the system, which is precisely what occurred in 1999 at St. John's University and the College of St. Benedict, two sister schools in central Minnesota. It took many weeks to get the library's computers back online.

Commentators allude to and even discuss the integrity of data and information, but the convenience of Web access, the astonishing quantity of ostensibly valid and reliable materials, the imprimatur of known individuals, companies, and presses all seem to militate against the possibility that a full-text database may be riddled with errors, a privately mounted paper may contain fabricated data, or a Web site might be misguided, incorrect, or despicable. Even sophisticated scholars may be seduced. Lower division undergraduates—i.e., just out of high school—are in no position to assess and evaluate material that appears to be legitimate. If the home pages of the White House, the Senate, and the FBI can be altered (Lundquist, 1999), it is obvious that anything that appears publicly in cyberspace can be distorted either inadvertently or purposely. Peer reviewed online periodicals as well as print journals that are disseminated online in full text through, for example, Gale's *Infotrac* or OCLC's *First Search* are probably no less accurate than they would be in hard copy, but only in a surrealstic Borgesian world could innumerable printings of the hard copy, deposited in countless repositories, be altered. In cyberspace, this is more than a mere possibility. Indeed, here the integrity of information is always suspect.

USEFUL IMPLEMENTATIONS

Despite the dismal tenor of much of the preceding commentary, it is nevertheless the case that there are many tasks that information technology enhances. Most beneficial are the devices and innovations that make communication possible or much easier for the disabled. The visually impaired or blind are now able to use computers through magnification systems, equipment that reads to a listener, and verbal input software. Similar technological innovations allow the physically disabled to efficiently access and disseminate information, which would have been impossible without help just a few years ago. To aid in the quest for an individual's

physical and mental emancipation is extremely worthwhile, in spite of the
negative aspects detailed above.

There can be few tenable counter arguments to the assertion that
external access is a useful and beneficial development. Anyone with the
requisite equipment (which continues to grow less expensive and easier
to install and use) can now access not only electronic communications,
library catalogs, Web materials such as home pages, interactive discussion
groups, services, commercial exchanges, and general publications includ-
ing newspapers, but those people legitimately associated with an academic
institution may also call up hundreds of scholarly databases that offer cita-
tions, abstracts, and even the full texts of essays, articles, or documents. It
is not necessary for all of this to be delivered to a computer desktop wher-
ever one happens to be, but it cannot be denied that this is helpful, effi-
cient, and desirable. People like convenience and are willing to pay for it.
But it is just a simple step from financial to metaphysical remuneration:
convenience is certainly worth a monetary sacrifice but, for the pragmatic,
intellectual distortion may also be acceptable.

ETHICAL INADEQUACIES

It is obvious that the discovery and applications of new technologies
change the ways in which we accomplish things. But universal human val-
ues remain amazingly constant. Thus, despite the pleas of scholars such as
Hans Jonas (1982) or Duncan Langford (1999), who insist that recent
technologies are so different in kind from their forebears that we require
a new ethics to cope with them, we can continue to apply traditional ethi-
cal principles and considerations to contemporary situations and realize
positive results. The problem is that ethical commitment is dependent on
the participants' good will, and far too many of the people involved in the
production, dissemination, storage, and retrieval of information are less
interested in correct action (for its own sake or to bring about acceptable
consequences) than they are in reward, profit, power, self-aggrandizement,
or ego-enhancement. Ethical commitment and moral suasion are inad-
equate for the task at hand, and sole dependence on ethical strictures
would result in ubiquitous anarchy. Correct, socially approved action de-
rives from acculturating sensitization reinforced by parental, peer, and
social pressure, and solidified by fear of the law's heavy hand. Here is the
crux of the problem: ethical dilemmas are insoluble and ethical precepts
and theory are of very little use when the participants are not committed
to a mutually acceptable code. Ethical offenses, especially in an academic
setting, do not carry fearsome penalties; indeed, they may bring forth no
official sanctions at all. The impediments discussed throughout the course
of this discussion are real and harmful. It should be possible to convince
information producers, disseminators, and seekers to act ethically but,
because the global community presents diverse viewpoints on correct ac-

tion and because many people care very little about ethical strictures, mere ethical concern cannot convince people to act correctly. Disapprobation, academic or professional sanctions, and fear of civil or criminal prosecution are much more persuasive guardians of acceptable action.

It is necessary to bear in mind that legal strictures are not necessarily pejorative. In an anarchic or purely libertarian society, law would play a minimal role, but the taboos, conventions, and legal constraints of social intercourse during 5,000 years of human history insist that mandated regulation is an integral part of the social enterprise. In the context of information provision, people may be confused because various venues produce disparate and sometimes contradictory laws. Countries, provinces, states, and even municipalities vary dramatically in the legal sanctions they impose. This is both unfair and confusing. Naturally, the unwary, the youthful, and the barbaric may take advantage of this situation. The production, creation, dissemination, archiving, and accessing of data and information is already controlled by law. People are not allowed to distort the truth or publish or sell material that does not belong to them. But electronic systems make it so easy to locate and manipulate data, information, and images or click and paste a document that property rights are no longer honored; plagiarism is endemic in academe; child pornography is a growing problem; privacy encroachments of one's financial data or medical records threaten the very fabric of society; and hacking and cracking wreak havoc with personal, academic, corporate, governmental, and military Web pages. American privacy legislation provides an excellent example of how matters could be improved. Instead of a farrago of laws protecting various and disparate matters (video rentals, credit card numbers), Congress should consider an omnibus law that would protect the general privacy of the country's citizens and its visitors. The limited interests of specific lobbies such as the business sector should not deter the imposition of legal constraints that most people would agree are necessary to protect us from those who profit from privacy encroachments.

CONCLUSION

The present author has long argued that information professionals (and this includes not only librarians and information brokers, but also extends to doctors, lawyers, and even teachers—i.e., those who analyze situations and tender advice) must increase their awareness of their respective situations, sensitize themselves to ethically acceptable ways of doing their jobs, and act accordingly. But twenty-five years of observation have led to the realistic conclusion that ethical commitment is not enough. The external pressures that society, peers, and need impose for success, remuneration, fame, and power make it very difficult for the weak to persevere. Consideration of others' needs and feelings, protection of confidentiality, real informed consent, and truly judicious technological

implementations, are not top priorities in a world in which hatred, racism, crime, terrorism, and chemical, biological, or nuclear warfare are more than mere possibilities. For those who do care, ethical precepts and commitment can help to make the information world a better place; for those who accept or prefer mere convenience, fragmentation, threats, or cracking, ethics is of very little value. And this is the lamentable point at which the law must impose itself. If one's conscience fails, fear often will provide guidance.

REFERENCES
Jonas, H. (1984). *The imperative of responsibility: In search of an ethics for the technological age.* Chicago: University of Chicago Press.
Langford, D. (1999). Beyond human control: Some ethical implications of today's Internet. In L. J. Pourciau (Ed.), *Ethics and electronic information in the twenty-first century* (pp. 65-75). W. Lafayette, IN: Purdue University Press.
Lundquist, E. (1999). Hacking is no longer merely a prank. *PC Week, 16*(23), 118.