

## **Future universities, future libraries: the future of higher education and the implications for Libraries**

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### **The context**

It is all too easy to look at libraries as if they were self-contained entities. But if we are to take a sensible look at them and their future, we need to study them in their context; for like all social institutions they exist only to serve the needs of their societies. Information technology is setting much of the context. Many of the traditional operations and services of libraries -acquisitions, cataloguing, issuing, interlending- are benefiting from automation, some to an enormous extent. But technology is having more fundamental effects on the environment in which libraries operate. One obvious trend, which is not directly related to technology, is the reduction in funding from public sources, a process common to the whole public sector, and one to which there seems to be no end as countries struggle to compete in a globalised world. Others are directly influenced by technology: the increased capacity of the private sector to do much of what libraries have done; the ability of individuals to bypass libraries for an increasing amount of the information they want; insistence of libraries' funding authorities on economic and social justification for all they do; the fact that the very material that libraries handle is fundamentally affected by IT; and the ability to transfer information almost instantly from almost anywhere to almost anywhere.

Few publishers are bold enough to predict where publishing is going, or can even say what "publishing" means when anyone with a computer and a printer can produce and distribute material. The future of indexing and abstracting services is more and more uncertain. Boundaries between publishers, the book and periodical trade, database producers and libraries are now very fluid, and there is little sign yet of where new boundaries will fall. The World Wide Web, a chaos on which attempts are constantly being made to impose some order, is responsible for changes in the provision and dissemination of information that would have been inconceivable only five years ago.

The role and functions of libraries, especially national and public libraries, are challenged by one report after another: whom they should serve, what they should do, how they should do it. Industrial libraries have tended either to disappear or to turn into information management centres. Libraries in the public sector have hitherto been protected from the jungle around them, trading off lower salaries and an absence of thrills for job security - living in

cages where they can feed and breed in comfort. The fences around the cages are disappearing fast, and public and academic librarians have to learn to survive in the jungle. When even the jungle is changing its nature, this is a tall order.

Academic libraries are probably the most stable type of library, since at least their clientele is assured - or is it? For the academic world too is on the threshold of radical changes. Not only is it too subject to immense funding pressures, but there are other more fundamental forces that are beginning to undermine it. The one that is least directly related to IT is the move to lifelong learning. The content of most degree courses, in science at least, begins to go out of date within five years, and after ten years much of it is obsolete. Perhaps degrees should have a "sell by" date stamped on them, and be expunged from the person's record after ten years. The only things in higher education that are of permanent value, apart from a solid core of basic knowledge (such as mathematics in a science course), are a solid foundation of culture in its broadest sense and *the knowledge of how to learn*. A graduate ought to be good at knowing where to find new information, how to assess its value, and how to use it. He/she ought also to be imbued with an inexhaustible curiosity, an insatiable hunger for knowledge. In today's unstable job market, where many jobs are changing their nature, some jobs are disappearing and new ones are coming into being, and where lifelong employment in one sort of job, let alone with one employer, is very much the exception, the ability to update existing knowledge and gain new knowledge is vital.

One major consequence is that lifelong learning will not only be necessary but will become more important than a first degree. Some large firms have recognised this and created what are effectively their own academies to educate and re-educate staff. Universities would be expected to play a large part in the process of lifelong learning at higher levels: in the case of large firms a supporting role, in the case of smaller ones a main role. If they do not play a role, they will be missing a huge opportunity. If they do play a role, it will certainly involve a great deal of remote learning, for which the technology is gradually becoming more adequate. The whole system of qualifications will need rethinking. So will the physical nature of universities; they will still need campuses, but they will change from mainly centripetal to mainly centrifugal systems.

The shift to lifelong learning is one fundamental change. Another, more closely connected with information technology (IT), is a shift from teaching to learning. This is being forced on universities by financial constraints, especially as student numbers increase - teachers typically account for about 70% of a university budget - and it is enabled by IT. It is also good in principle, since self-instruction is a much more effective form of learning than being taught. Self-instruction is incidentally a much with another modern trend, an emphasis on individual responsibility: the onus is on the learner to learn, rather than on the teacher to teach. Personal instruction has a very important place, but its importance is largely supportive and inspirational, rather than as

a means of imparting knowledge. But the balance between teaching and learning will change, and the teacher will no longer be the main resource in the university. In twenty years' time, quite probably less, a major transformation will have occurred: instead of libraries supporting teaching, there will be learning resources supported by teachers.

Another factor that will enforce change is the modern emphasis on the customer. The "take it or leave it" mentality has almost disappeared from industry and business; people want and expect a choice, and will shop around or keep demanding until they get what they want. Translated to the academic world, "the customer is king" philosophy becomes "the researcher or student is king" - and the university becomes the servant. We are moving back to a situation like that in medieval Paris, where students effectively employed teachers. We can of course do better than medieval Paris, since we can tailor the service -not only the means and speed of delivery but the content- to the individual. This change is already in progress. It had reached a quite advanced stage in one European university I visited last year; there, students were working in study groups, and making requests for information and (to a lesser extent) teaching as and when they wanted them. "Mature" students who are already employed, or are studying in intervals between employment, will be even more demanding.

The task of helping students to learn how to learn should of course begin at school; this makes the university's task much easier. Schools too need to shift from teaching to learning. Some are doing so: there is much more project work than there used to be, and there are many more computers in schools. There is however a long way to go.

### **The impact on libraries**

A major consequence of the shifts from one-off to lifelong learning and from teaching to learning is that a rigid division in universities between teaching, computing, educational technology and learning resources (which include the library) becomes both dangerous and increasingly meaningless. Moreover, the importance of learning how to learn makes it necessary to break down barriers between teachers and librarians. I believe that the teaching activity of the academic of the future will consist largely of preparing instructional materials which can be used anywhere, not just in one institution, and of acting as a counsellor of students, with the occasional inspirational (one hopes) lecture thrown in. Universities have usually argued that teaching and research should go hand in hand, but they are coming to be increasingly dissociated. The "teacher" (if that is any longer an appropriate term) will have a local, probably a national and possibly a global role, depending on how good his/her materials are and how much they interest other institutions. The librarian's role is to provide access to all kinds of instructional as well as research materials. There is a thin line between preparing materials, organizing

them for use, and providing instruction and help in using them, and there must be close collaboration.

There has been a strong trend towards "convergence" between libraries and computing in some countries, often for reasons of finance rather than of principle. In Britain, no less than 60% of universities have "converged" them; though the degree of convergence varies, in at least one British university convergence has become integration, to the extent that the staff of the two areas have been merged. Convergence is in fact taking place in *learning resources* (e.g. educational software, books), *learning systems* (computers, libraries), and *learning suppliers* (e.g. teachers, librarians). Convergence is also taking place between *research resources* and *research access systems*. The implication is that the entire university will need to be restructured if it is to serve the needs of society and meet the demands of individuals.

If the above diagnosis gets anywhere near to the truth, librarians cannot go on as in the past, when they could plan for next year by adding a bit to the last year's budget (and then chop bits off because there was not enough money); for the changes are not incremental but fundamental.

### Preparing plans and visions

Not unnaturally, libraries have turned to strategic planning to provide them with a clear path to the future. However, it was never easy to predict what would happen in the next three or four years, and it has now become totally impossible. Time after time universities, and libraries, work out detailed plans, which are totally wrecked by a government change of policy or a further cut in budget. I remember being asked a few years ago how libraries in a less developed country could make sensible strategic plans in very unstable conditions; we in developed countries can now sympathise with them. Mintzberg<sup>1</sup> has articulated what many were thinking and more were practising, certainly in industry: that much strategic planning was not only useless but positively dangerous. A great deal of effort is put into five-year plans, which commonly suffer one of two fates. Either they are not acted upon after the first year, in which case they are a waste of time and demotivating to the staff who helped to prepare them; or, worse, they *are* acted upon, in which case wrong trails will almost certainly have been pursued and opportunities will have been missed. I would very much like to see a study done of strategic library plans of the last ten years and their subsequent fate of both them and the libraries concerned; I suspect that some plans are so utterly forgotten that they are hard to locate.

This does not mean that the library should not have a strategy, or that it should not plan: merely that the conventional process of planning needs re-

1. Henry Mintzberg. The fall and rise of strategic planning. *Harvard Business Review*, 72(1), January-February 1994, 107-114.

thinking. But nothing can be done unless the library has some idea of where it wants to be in, say, ten years' time. Unless there is some possibility that light will appear at the end of the tunnel, people will not enter it. It is therefore necessary to develop a vision towards which people can strive during periods of great uncertainty. The vision may prove unattainable, or it may not -almost certainly will not- turn out as desired (an experience familiar to early explorers). It would probably be wrong to say that any kind of vision is better than no vision, but to have no vision is to surrender to chaos.

Any human vision is bound to incorporate values, whether these are articulated or not. Systems cannot be proofed against disasters, but ideals and values can. A value that is fairly recent in historical terms is the principle that everyone has a right to receive information other than what it is absolutely necessary to keep secret. While there can be dispute about what is "necessary", it is nearly always much less than governments try to lead us to believe. It is noteworthy that extensive restrictions on information are without exception imposed by the nastiest regimes. Away from the sphere of politics, there is far less dispute about the right of people to be educated and to have access to published information.

If access to information is a right of the individual, it is seen by most countries as a necessity: countries of all political complexions, from Singapore to Cuba, from Iceland to China, recognise that education at all levels is an essential (if not sufficient) key to prosperity and stability, and that education depends on information. Authoritarian regimes may resist the realisation, but they realise that whatever steps they take to restrict information are in the end doomed to failure by modern technology; a notable recent example is the use by Mesquito guerillas in Mexico of laptops and modems to let the world know what was happening.

### **A future vision**

One element in any vision of libraries must therefore be free (that is, unrestricted, not necessarily free of charge) supply of information. Where the academic library is concerned, this involves the ability to know what there is on any topic and to have access to it. But since it will be soon impossible to consider the library as a separate unit in the university, this must also be part of the university's mission; the library can not sensibly prepare a vision alone. It can however take the lead in the process of creating a vision; someone needs to, and I have seen little sign of any other part of a university taking steps in this direction. An ideal approach might be for the library to first sort out its own thoughts and then convene, or ask the university to convene, a Think Tank composed of imaginative and creative people who are concerned with the future of learning and research rather than with the protection of departmental territories or the expansion of personal empires.

At the end of such a process the library as a distinct organisational entity may disappear. However, *the functions* it performs will not disappear. The library may become part of a larger unit, or its functions may be differently distributed in a changed university structure. What exactly emerges is not in itself important. For one thing is certain: that most of the competencies of librarians will become more rather than less needed, because information handling skills (knowing how to learn) will be of prime importance and because the vast quantities of information available will need to be managed.

### The "holdings versus access" debate

The effect of information technology on publishing, storage and access has added great vigour to a debate that began some years ago on "access versus holdings". It used to be argued that the use made of many periodicals acquired by libraries did not justify their purchase and that it was more cost-effective to obtain articles as required from elsewhere; this is perfectly true up to a point. It is now argued that electronically stored publications will supersede printed ones, that economics will force libraries to hold less and access more, and that this should be warmly embraced as a matter of policy.

Prophecies that holdings will give way almost completely to access, and proposals that they should accelerate the process as much as they can, seem to me bizarre. Few information media have ever been totally superseded. Even stone tablets still exist, in the form of inscriptions on monuments and tombstones (which can perhaps be thought of as catalogue records of the contents of cemeteries). Each new medium is added to existing ones, taking over a few of their functions and finding new functions that only they can perform. One of the few media that has become extinct is the microcard, and that was merely an opaque version of the microfiche. I have no doubt that the traditional printed book and journal will still be with us in 25 years' time, probably for ever.

I have no doubt either that they *need* to be with us for ever; for, whatever computers can do with retrieving nuggets of information, they cannot offer the exposure to information that the printed page offers<sup>2</sup>. A scientific fact is one thing; a well structured book on some aspect of history or culture, or for that matter science, with a consistent and structured argument, is quite another. Among books I have read recently are Richard Dawkins' *River out of Eden*, Simon Schama's *Landscape and history* and Steven Pinker's *The language instinct*. I cannot imagine reading any of these online (especially as I read much of them on trains and planes); I read Dawkins and Pinker sequentially from page 1 to the end, but I also wandered to and from among the pages, read several passages twice and skipped over others, and mixed con-

2. Maurice B Line. The death of Procrustes? Structure, style and sense. *Scholarly Publishing*, 17(3), July 1986, 291-301.

centrated reading with browsing. If these books had by any chance been available only online, I would have had to download them, print them out in a decent format and on decent paper, and bind them into a compact form. Since many other people would want to do the same, it makes sense to produce them in this form in the first place. In any case, one reason why we can use online searching effectively is that we have developed over time a huge internal database of knowledge from which we can select search terms.

It is not just because I am not so totally adjusted to computers as the younger generation (I was in fact one of the pioneers of library automation in the UK), or because of the known dangers of continuous staring at monitors, that I cannot conceive of a system where I cannot browse through recent publications in a form that requires nothing but the naked (or bespectacled) eye. I *can* do browsing online, but experiments have shown that this is much slower and less effective, as well as requiring the input of search terms. In addition, I would be largely denied the benefits of serendipity, which frequently extends my range of knowledge and casts new light on areas of interest to me. Often I do not know what is of interest to me until I see it; indeed, it is not of interest until it awakens my interest<sup>3</sup>.

The idea that electronic access is all that is needed, and that the library of the future need have no books, is sometimes promoted by university administrators who are either unaware of the facts of life or who see the possibility of saving money - or perhaps both. Unfortunately, it is also promoted by some librarians who seem to want to prove their modernity (or futurity). In fact, access is most unlikely to be cheaper than holdings, since publishers are not going to want to make less money from an electronic system than they are from printed publications; moreover, electronic access is entirely within the producer's or host's control, whereas printed publications once acquired can be used by anyone without extra cost.

One library -that of Stevens Institute of Technology in Hoboken, New Jersey, a library I happen to know well- has gone further than any other by cancelling all its periodical subscriptions and relying on access<sup>4</sup>. The librarian has claimed that this actually provides better service to users, since by having to search databases users learn of articles etc. that they would otherwise never have I bund. It is worth spending a minute or two on this case, since it seems to have quite an influence on people who want to believe, rather as reported miracles influence those who want to believe in miracles. For this is no miracle. In the first place, the library is a technological one; the system would not work in the humanities or social sciences. Secondly, the library has on its

3.1 deal with these issues much more fully in: Line, Maurice B. Access versus ownership: how real an alternative is it? *IFLA Journal*, 22(1), 1996, 35-41.

4. Richard P. Widdecombe. Eliminating all journal subscriptions has freed our customers to seek information they really want and need: the result - more access, not less. *Science and Technology Libraries*, 14(1), 1993, 3-13.

premises the comprehensive collection of material that Engineering Index Inc. uses to construct its databases; this material is not on open access, but it is nonetheless there. Thirdly, the system works only because other libraries have not taken similar action - otherwise there would be nothing to access. Fourthly, if other libraries did follow suit or if the periodicals were not produced in printed form at all, the library would be entirely at the economic mercy of the producer, and quite probably end up paying more than it did when it subscribed to a substantial number of periodicals. In other words, the library is operating in a specific field of study, is claiming an absence of holdings that is only a half-truth, is acting selfishly, and is thinking only short term.

It has been suggested that the world-wide academic community can somehow bring academic publication within its own control, and that thereby the costs of access to academic publication can be brought down to a manageable level; but I believe that this is a more complex task than is often suggested. The truth is of course that both conventional materials and online access will both be needed; it is not a case of either/or, but of the best balance between them. The balance should be determined partly by what medium is best for each kind of matter, partly by the preference of users (assuming that they are given a choice), partly by relative cost.

### **A future model**

So far as printed matter is concerned, my own idea of an optimal functional (as opposed to archival) academic library is one where there would be a large collection of current material, which would be weeded after a few years largely according to the use or non-use made of items. Older material would either be held in tangible forms such as CD-ROMs or be accessed online. Current acquisitions would however be aimed at satisfying demand rather than building up a "balanced" collection; student needs would be met more fully than now, and "fringe" research needs would be met by access, particularly for periodicals. Thus not only would the balance between new and old be heavily in favour of the new, but the balance between books, for which interlibrary loan is a rather poor and slow substitute, and periodicals, most of which can be obtained quickly and easily from elsewhere, would shift back towards books. Since students tend to use primarily books heavily while researchers tend to use primarily periodicals, if and when students become customer-kings there will surely be pressure for this to happen anyway.

Although in theory it should not matter much where things are located in an electronic world, facilities still have to be staffed, and constant co-ordination is necessary. The best solution for the provision of and access to information in academic institutions in future may therefore be to combine in one place printed material, physical audio-visual and electronic media such as CD-ROMS, and access to remotely stored electronic material, together with the expertise that is necessary to organise both material and access. This is what



some academic libraries are aiming at, though to my knowledge few are seeking to incorporate learning resources in their widest sense - i.e. including digitised lectures of academic staff. In many institutions, the library is de-centralised among departments or faculties, with a central collection that may be quite large or quite small.

What are the implications of self-directed learning for these models? If the students are on the campus, they will want to have access from where they are - perhaps in a department, perhaps in residential accommodation. Some of this access they will be able to get direct, without any assistance. If they do need assistance, it is easier if it is available in their department than if it is in a central facility, but the quality of help may be less than if it is concentrated. The need for assistance is diminishing as search software becomes ever easier to use. but the advantages of this may be cancelled out by the increasing volume of material available, so that some help will almost certainly continue to be required. As for the increasingly common remote student, he/she will certainly require access where he/she is, and is perhaps more likely to need assistance, since support from colleagues at hand will be lacking.

On balance, therefore, the best future model for the academic institution seems likely to be the centralised resource, *provided* that it is centrifugal. "That is, it must reach out to users; it must be able to supply publications to students or researchers whether they are on the campus or more remote, by loan, photocopy, or transmission of digitised text. It must also be able to offer advice and assistance with computer systems and searches, not simply in normal working hours but during the whole waking day (perhaps the whole day - one university library in the UK has just started to open its doors for 24 hours a day). It may also be a centre where users of all kinds can meet and discuss: for the mutual stimulus that is one of the most valuable features of university education will be as necessary as ever, if not more necessary.

In universities with very widely scattered campuses, the model might need to be modified, but as a general principle, the fewer libraries the better, for several excellent reasons. It is impossible to staff numerous small libraries properly for long hours; if they are not staffed, books tend to disappear. Staff can be much more efficiently and economically used in one library than in 10 or 20. More fundamentally, knowledge cannot be divided into neat subject divisions, and either boundaries are too narrowly drawn or there has to be extensive duplication between departmental libraries, which simply cannot be afforded.

Another point needs to be made strongly here, since I believe it has special relevance to Greece. Libraries are now complex organisms, which need to be managed by professionals, not by part-time academics, however supportive they are of the library. Moreover, if top posts were filled by professional librarians at proper salaries, there would be much more incentive for people to join the profession; it is very frustrating to work in a profession where the top posts are effectively barred. I have seen quite dramatic improvements in

other countries as librarians have begun to take over from professors as heads of their organisations. Until this happens in Greece, I am convinced that progress will always be limited.

Much what I have said about the future role of academic libraries is incidentally applicable *mutatis mutandis* to public libraries. Among other functions, they could have a brilliant future as centres of lifelong learning, offering the same sort of facilities as those suggested for universities, perhaps at a "lower" (i.e. less academic) level. This suggests a further blurring of roles, this time between the academic library and the public library. The academic learning/research/information resource of the future could serve people with "academic-type" information, whether or not they were members of the academic institution - they might be in industry or business, or members of the wider public. The public "library" could serve as a source of general culture and recreation, as now, but also as purveyors of information on less academic matters - on matters as varied as building regulations, language instruction, social problems, and so on.

### **Promoters and inhibitors of change<sup>3</sup>**

The librarian of the future, whatever he/she is called, will have to possess or acquire new skills and attitudes. Knowledge of IT is obviously essential: not just what it can contribute to the library, but what it is doing to the world of publishing and beyond. Flexibility and the capacity for speedy response must be cultivated: systems and procedures must be capable of change, but above all staff must cultivate flexibility as if their lives depended on it - their jobs certainly may. Openness of mind, an unwillingness to accept textbook solutions, eyes that are swift to spot problems and to see opportunities, imaginations that can find ways to seize them - these are becoming paramount qualities. Most of the skills and attitudes needed are not specific to librarianship and information work; the emphasis will be on transferable skills, which can be applied to a variety of jobs inside or outside libraries.

One problem with visions of this sort is that many librarians seem to have neither the appetite nor the abilities to realise them. Indeed, most of them are so bogged down in the business of day-to-day survival that they do not find time to create a vision in the first place. Part of the problem lies with the professional education that most librarians have to endure; this focuses on answers (which keep changing) instead of questions (which change very little), and it neglects management skills. It too will surely have to change - it is beginning to do so already - from one-off courses to lifelong learning. I have always believed (and my past experience with my own staff has confirmed

5. See Maurice B. Line. Managing change, changing managers, In: Lewis R. Foreman (ed.) *Change in libraries and information services: managing change or changing managers?* London: HMSO, 1993, pp.5-16.

my belief) that most basic knowledge needed by librarians can be instilled in one year at most; after that what is needed is a continuing combination of practice and learning. I realise that this is not possible if a library qualification is to have the same status as degrees in other subjects; the solution might be to include in the course a great deal of non-librarianship material such as economics, psychology, language and literature, management, etc.; all these disciplines are useful in libraries, and knowledge of some is essential.

But whatever the first qualification a librarian has, there is a pressing need for far more continuing education. Librarians must be responsible for much of this themselves, but they must also be given the time and opportunity to pursue it, and also the incentive - which may be negative, in that if they do not their chances of moving up or staying in their jobs at all are reduced. One country that I have been advising on its new library law is likely to build into the legislation a requirement that every publicly funded library has to allocate 5% of its staff budget each year to continuing education. If this seems impossibly high to you, I would remind you that major retail stores with a huge reputation for quality and service spend much more than that; they would not do so unless it paid them to. At the same time, the library itself must be a learning institution, where everything is challenged and staff are constantly forced to think and keep thinking. Most of us will have known bosses who encourage initiative and new ideas, and bosses who squash any signs of either.

Librarians have often expressed concern over their lowly status. There is a vicious circle: low status does not attract the best people, and does not make it necessary for staff to do consistently high level work; while staff who are sometimes of low calibre and who are doing a mixture of skilled and routine work cannot easily claim higher status. Action on several fronts is needed: a recognition of chief librarians as equivalent to senior professors, and of senior library staff as equivalent to lecturers; a raising of the level of work of qualified staff; and the abolition of much routine work, allowing low paid staff to be retrained and upgraded. I must add here that in many if not most libraries where I have worked as a consultant staff in lower grades are capable of doing most of what their immediate superiors are doing, that moreover they are good sources of ideas for improvement, and that they are often much more user-oriented.

This leads me on to another major inhibitor of change: the present management style of most libraries. The management styles and systems of most libraries I know -and I have seen a great many in various parts of the world over the last nine years- are altogether inappropriate in a period of rapid and continuing change. Hierarchical structures and directive styles of management are calculated to discourage staff from thinking for themselves, taking responsibility, and developing to anything approaching their full capacity. Rarely is there absolute openness of management and total trust between managers and staff, and rarely are staff intimately involved in thinking and plans. Without openness and trust, not only will necessary changes meet re-

sistance, but also staff will not be able to make their own contributions of ideas to the direction and process of change. I never cease to be amazed by the capacities of staff at all levels, nor do I cease to be frustrated at the way these capacities are under-exploited, to the great detriment both of the library and of the individual staff.

The organisation needs to operate as a whole. That does not mean that conflict should be suppressed: rather the reverse. It should be encouraged so long as it is not personal or destructive, for dispute and discussion are a fertile ground for new ideas. Total consensus in an organisation is often not easily distinguishable from slumber. The atmosphere should be one of continual excitement and exploration. Systems and activities that have served their time should be discarded ruthlessly: as well as thinking the unthinkable, staff may need to unthink the thinkable. Above all, as I have implied earlier, the organisation will need to be constantly alert and quick on its feet.

As for bosses, they must not impose their own ideas or solutions on the library, or even their own analyses of the situation. Bosses often feel that they are losing control or not doing their jobs properly if they are not "directing". Chaos will ensue, they fear, if staff are left to work things out for themselves and not kept on a tight rein. But studies of chaos theory applied to organisations show that many bosses who can tolerate some seeming disorder and leave staff alone are more effective and better respected. Over-direction is much more common than under-direction, and much more damaging. The boss's job is to take the lead in developing a vision, to co-ordinate activities, to try to ensure that the abilities of all staff are exploited to the full, and perhaps above all to convey a sense of excitement - which is of course difficult if the boss is not excited him/herself. Sometimes -rarely- intervention may be necessary; experience and keen judgement are needed to recognise those few occasions.

"Sitting back" requires courage and a personal sense of security; it is usually the insecure boss who over-directs. The same courage and security need to be cultivated among staff. They too need to develop a tolerance of uncertainty, something that may prove hard for some librarians who have seen the imposition of order as their main task in life. If they are to be creative and imaginative, they must be sure that new ideas will not be rejected, and must also be given the freedom to innovate, including the freedom to take risks and make mistakes; for it is impossible to be right all the time in chaotic conditions.

It has to be said that librarianship is not a job that has normally been seen as an attractive one to innovative and entrepreneurial people. Though this perception is changing gradually, most libraries have staff who do not take easily to the new world, and who are much happier working within tight rules and boundaries. This not the place to discuss how to handle staff who were recruited in different times with different functions in mind, but I believe that in many if not most cases such staff can be encouraged to shed their old clothes and -having first put on new clothes rather than going around naked-

*can* come to make a notable contribution to the new world in which they are finding themselves. They certainly cannot be bullied into imagination and innovation, and undue pressure will only make them feel more insecure. Staff who are truly flexible will know that wherever the library ends up in the organisation, and even if they end up outside the library, they will have a part to **play** and be able to play it.

## **Conclusion**

To use a jargon term, education and society are in effect, though largely unconsciously, being "re-engineered", as a result of economic and social forces, themselves heavily influenced by information technology. Libraries are inevitably, and centrally, caught up in the turmoil. There will be an ever-increasing need for access to information in a wide variety of forms, and a need for systems of lifelong learning, as well as access to recreational and cultural materials. Libraries are better placed than any other organisation to be the nucleus of new organisations that serve these needs, but they will have to grow into different bodies, and for this they require new attitudes and a wider range of skills, including high level management skills.

To realise the new vision will require money: for equipment, for materials and access to them, probably for buildings. Where is the money to come from? The answer is in principle an easy one. If a switch from teaching to learning is taking place, it is only logical to transfer resources from teaching to learning. I mentioned earlier that, in the UK at any rate, 70% of university expenditure goes on academic staff. A transfer of just 5% of this would transform learning resources - in the UK, it would nearly treble the library budget. If to this is added the money devoted to computing and educational technology, we have a very powerful unit with a very substantial sum of money at its disposal.

The changes will not be easy; universities tend to be rather conservative institutions. Academics are very good at preaching new ideas (occasionally revolution) to the rest of the world; they are less good at accepting change themselves. I sometimes think that the chief obstacle to better academic libraries is academic staff. Courage and leadership will be needed to effect the necessary transition. Some resistance from academics to the shift from teaching to learning might be expected; though a reduction in their numbers would take place gradually by natural wastage, and no individual need suffer, the shift still represents a reduction in their power. Nevertheless, universities have already seen big changes in the last few decades, and there is no reason why they should not manage a still more fundamental change.

Students too need to change in many countries. A degree, often pursued at a gentle pace, has in the past been the key to a secure future. This is no longer so, and the prospect of unemployment -even unemployability- will surely force students into making the necessary change. Also, students may have

been socially disruptive, but academically they have generally been respectful. They are now becoming less respectful and more demanding. As they change, so they, as customers, will put pressure on their universities to change.

Change will occur whether we want it or not. The only questions are whether we wait for it to wash over us, drowning many in the process, or whether we anticipate and help to affect the direction of change.