The Challenges of Human Resources for Information Communication Technologies (ICTs) in Nigerian Universities Libraries

J. E. Ikem and R.A. Ojo
Kenneth Dike Library
University of Ibadan, Ibadan

Abstract

The paper examines the scenario and challenges associated with Information Communication Technologies (ICTs) with particular focus on Human Resources (HRs) in Nigerian Universities Libraries.

It identifies and discusses the need for availability of "Appropriate Human Resources" i.e. a calibre of ICT human resources well-equipped with know-how and skills for innovative adaptations of ICT utilisation in Nigerian Universities Libraries (NULs). The paper also stresses that the technological salvation of Nigerian Universities Libraries (NULs). The paper also stresses that the technological salvation of Nigerian Universities Libraries lies not in their perpetual dependence on technologically equipped expatriates and their agencies, rather it lies in their ability to evolve internally generated programmes for appropriate human resources development aimed at providing indigenous ICT capacity for adaptive and innovative ICT utilisation within their specific local environments. It also emphasises that this is a way for Nigerian Universities Libraries to move from being just ICT consumers to being ICT producers for the benefits of their patrons.

Instruction

Third World libraries, as a rule, receive Information Communication Technologies (ICTs) technical assistance, and training as part of International Development Projects (IDPs). Library improvements and their intended objective, information transfer, are more effective and lasting if key administrative and policy issues are addressed by the projects. Electronic information provides librarians with challenges that are not necessarily new. However, as the nature of the librarians' roles changes, so do the challenges to long standing professional codes of ethics. The globalisation of information means that access to information is no longer limited by what is available in the local collection. Information Communication Technologies (ICTs) provides challenges to access. Electronic access is wonderful if one has the resources and is connected. The challenge is for the librarian to contribute to establish realistic collection development policies. The critical responsibility of the librarian is to provide access to information in all formats to all people. Librarians are charged with selecting, organising and instructing patrons on how to locate and use the resources and preserving information regardless of format or technology. The information and the pervasive thinking that everything is available on the web have created new challenges to these traditional professional ethics. Acquiring and providing dependable access to electronic recourse require librarians to learn and apply new skills such

as negotiating license agreements and understanding evolving technologies. Along with traditional ethical conflicts, librarians are faced with new challenges to provide equitable access to useful organised resources, to address petitions, deselect or filter, negotiate less-restrictive licensing policies, and to maintain the anonymity of individual users within electronic transactions.

Human Resources Development

Development of ICT human resources is an often neglected aspect of ICT utilisation strategy in Nigerian Universities Libraries. Most lack the educational and training facilities needed to help people acquire the proper skills and the few training institutions that do exist have not been able to keep up with the demand.

There is a lack of professional ICT and management know-how and skills required to plan, coordinate and manage the introduction of the technology or to bring about a proper mechanism for making the right choices and for innovative adaptation of ICT utilisation to local needs. In some cases, this has led to non-optimal use of ICT systems. There is over dependence on expatriates personnel consultants who because of their poor knowledge of the local context tend to develop inappropriate systems. Dependency on foreign ICT packages based on models that reflect less of the realities of systems in the local context of most University libraries in Nigeria and with the regressive effect that there are correspondingly fewer analysts and programmers in a good number of University libraries in Nigeria, with the experience that comes from having developed their own in-house systems.

Dependency on donations from foreign agencies like Multi-National Corporations (MNCs) and Multi-Lateral Organisations (MLOs) which has made most University libraries in Nigeria "foreign aid-addicted" being able to achieve nothing tangible without aids from foreign agencies. With this unbalanced relationship with foreign agencies, there is little of ICT transfer but just transplantation; i.e. mere dumping of physical technological goods without necessary skills and know-how. This dependency syndrome is so prevalent in our University libraries in Nigeria that one has the impression that the University libraries in Nigeria cannot provide any ICT solution to their problems without consulting with foreign experts. Hence, the indigenous capability for developing, repairing, managing, and operating ICT systems domestically is grossly limited in most University libraries in Nigeria.

There is a lack or total absence of the link between ICT training institutions and industry. The result has been the proliferation of ICT peripheral applications and less of the ICT core applications skills. A large discrepancy exists between the supply of human resources in ICT and the market demand. Also, there is a lot of academic research results with claims of success in the laboratory but which are of less practical relevance to ICT using university libraries.

ICT Utilisation and Human Resources Problems in Nigerian Universities Libraries

Problems of ICT utilisation in the University libraries in Nigeria resulting in the scenario sketched above have been broadly categorised into three problem areas; i.e. operational, contextual and strategic problems.

Operational problems include technical constraints, lack of skilled staff, inability to effectively utilise the technology, under-utilisation of the technology and inability to maintain the systems.

Contextual problems deal with a weak fit between models of the technology which originates from the foreign experts and the recipient University library's organisational, socio-cultural and economic environment. Also, it deals with the semantic differential between how phenomena are understood and how things are worded i.e. differences in value system, in what constitutes reasonableness, rationality and what is acceptable.

Strategic problems embrace the diffusion of ICT and how scarce resources competing with other crucial demands in the University libraries in Nigeria are to be best utilised. The strong view held in this paper is that the pivot problem around which these three dimensional problems revolve is the absence of appropriate human resources. That is, the calibre of ICT professionals well-equipped with the know-how and skills necessary for building indigenous ICT capacity in Nigerian Universities Libraries. It is this capacity that enables innovative and adaptive utilisation of ICT within the local contexts of the University libraries in Nigeria such that Nigerian Universities Libraries (NULs) can move from being just ICT consumers to being ICT producers. This would normally lead to the realisation of the socio-economic objectives of adopting ICT in Nigerian Universities Libraries (NULs).

This view has been alluded to by some researchers who have stressed the indispensability of skilled human resources to effective and productive ICT utilisation. For the (NULs) to attain the goal of development through ICT, it needs to have, among other requirements, some human and natural resources as well as indigenous skills to enable them to assimilate, utilise and upgrade the new technology. The most important contributor to poor choice of applications of ICT in (NULs) is lack of ICT amongst managers and the non-availability of ICT professionals who can bridge the gap between management and technology. In most (NULs), for example, the general shortage of human resources with requisite expertise, background and experience in the ICT systems development and maintenance has a limiting effect on their capability to understand and thereby actively use the technology.

Appropriate ICT Human Resources in Nigerian Universities Libraries

Put succinctly, Appropriate Human Resources (AHRs) for ICT utilisation in Nigerian University Libraries refers to the calibre of ICT professionals who are well-equipped with operational, contextual and strategic capabilities required for innovative and adaptive use of ICT within the respective local environments of the University libraries in Nigeria.

Operational capability exists where ICT human resources are well-equipped with necessary technical know-how and skills required for domestic ICT systems development, maintenance and sustenance.

Contextual capability is that which enables ICT personnels to have a clear understanding of the social, economic, cultural and organisational conditions of the local environments with respect to ICT utilisation as well as the socio-cultural, organisational and economic biases of ICT coming from abroad. It is also the ability to recognise these conditions as the critical

issues in determining ICT requirements and potential utility. Strategic capability deals with a combination of technical, managerial and social know-how and skills required for innovative and adaptive use of ICT in the local context of its utilisation. It also has competence in:

(a) Recognising what can be utilised directly and what might be adapted for utilisation.

(b) Restructuring the context of utilisation to provide a more conducive environment for the technology if need be.

It is expected that availability of Appropriate Human Resources (AHTs) with such operational, contextual and strategic capabilities would enable the University libraries in Nigeria to acquire the capacity to develop or adapt the use of ICT systems, maintain and expand them according to their needs, such that the intended socio-economic objectives of ICT adoption in the University library systems in Nigeria are realised.

The two key elements emphasised in the definition of Appropriate Human Resources (AHRs) for ICT given above are:

• that ICT human resources in the University library systems in Nigeria must have to be indigenous; and

• that they must have capability for innovative and adaptive utilisation of ICT.

The rationale for emphasising these two key elements is not far fetched.

Technological capability, that is, the general ability to undertake a range of tasks that involve consumption and production of any particular technology, is embodied in the know-how and skills of workers in the University libraries in Nigeria and is gained from training and hand-on experience. The indigenous development of this capability is necessary for any University library to exercise control over its technological destiny in order to adapt technologies to local conditions and local needs. Without this capability, there will be no local production, no local innovation.

Policy Strategy Recommendations for AHRs Development

The University libraries in Nigeria should undertake the following:

• Organise ICT literacy programmes for library staff aimed at creating enough ICT awareness to minimise the socio-cultural and organisational problems emanating from ICT illiteracy often encountered in ICT utilisation in University libraries globally. Formulate well planned, articulated and monitored policies on:

(a) the activities of vendors/suppliers involved in ICT utilisation projects to guarantee technology transfer with know-how and skills necessary for appropriate human resources (AHRs); and

(b) establishment of private training institutions to ensure conformity to standards required to produce AHRs e.g. setting up appropriate accreditation and monitoring mechanism.

• Designate different tertiary institutions as centres of excellence for different areas (e.g. Hardware development and maintenance, software development and maintenance).

• Identify the areas of focus with regards to the human resources capability that

need to be built up. For example, skills in such areas as word processing, database management systems, CAD, A1 applications should not be dominated by imported skills. Normally, skills required in areas that are specific to the University library systems requirements which are often outside normal business area and which therefore might otherwise have been ignored e.g. University local contexts should be indigenised.

• Copy, modify ICT systems and innovatively adapt its utilisation to local needs, with trainers and trainees re-inventing the wheel to gain experience where necessary. Relying on local skills for systems development could make it take a longer time, and of course, mistakes could be made.

However, all these should be seen as the essence of learning and of building human resources capabilities which could be applied more effectively in Nigerian Universities Libraries systems.

Some Possible Reasons for Applying Information Communication Technologies to Library Operations

(1) To cope with increasing demands.

(2) To reduce staff or prevent staff increases.

(3) To allow more activities to be performed by clerical and para-professional staff.

(4) To improve existing services.

(5) To provide new services.

(6) To collect better data to aid overall management of the library.

The first three which are interrelated all involved staffing needs. When automation was

first introduced into libraries, a major justification was that it would save money by reducing the number of staff required or at least allowing the library to cope with increasing demands without the need for extra people.

In actual fact, there is little evidence that automation has reduced staff size (Crag Hill *et al,* 1989). If Information Communication Technology has not reduced the overall size of staff, it has certainly had a profound effect on professional/non-professional relationships.

Items four and five relate to the services that University libraries in Nigeria offer. By embracing automation in the form of computer and telecommunications technologies, libraries are now able to offer services that they were quite unable to offer earlier e.g. access to information in global terms.

The last reason for applying Information Communication Technology as identified above relates to the overall management of the University library systems in Nigeria. One could make a strong case for claiming that the major justification for automated systems is that they can yield data, difficult or impossible to collect otherwise, that allow better management of the library and its resources.

Effect of Information Technology on Library Staff

The following are the effects of Information Communication Technology on University library staff.

• Demands placed on the individual

• Skills required

• Professional/non-professional relationship

• Training needs

- Job satisfaction and self-image
- Contact with the public
- Deprofessionalisation
- Employee fear and acceptance of the Information Communication Technology

Demands on Members of Staff

It seems generally agreed in the library profession that technological applications have placed greater demands on members of staff of University libraries in Nigeria. Most obvious is the fact that they have had to learn to use various computer - based systems and this requirement has become more onerous with the increase in number and diversity of the systems. For example, a reference librarian may now need to search databases accessible online through several different vendors, as well as some available ones in the library on CD-ROM and this will require knowledge of different software and search capabilities.

For each of the overt demands associated with a particular technology, some more covert demands may also be created. For example, the librarian may have to instruct users in database, searching techniques which adds a new dimension to the requirement: a good searcher is not necessarily a good teacher.

The Information Communication Technology has increased demands on library staff in other ways. Automated systems require greater accuracy and rigor in use, due in part to the fact that more standardisations is needed to facilitate intra-institutional and institutional library resource sharing. Moreover, ICT exposes the individual work to wider scrutiny. The most obvious manifestation is the contribution of original cataloguing to a large bibliographic utility but other examples also exist since files that were once

the exclusive domain of a particular department may now be accessed by all library staff members, in academic setting and even perhaps by members of the public. Library users also place greater demands on the staff because they tend to expect more from the automated library than they did before. This heightened expectations range from better record keeping (e.g. users may expect the automated circulation system to indicate which books they have borrowed and when they are due) to a higher level of information service.

All of this suggests that the librarian of today needs to know more and to possess a greater variety of skills, than the librarian of twenty or thirty years ago. This has led to dissatisfaction among some staff members who feel than they now face greater pressures and responsibilities without a commensurate increase in status or financial reward.

The librarians must now be more adaptable in another way. The library and the library profession are going through a period of considerable change. Indeed, electronic networks can radically alter ones ideas about what constitutes a library and what is involved in "librarianship".

In the University libraries in Nigeria, a split may occur between the staff members who enthusiastically embrace information communication technology and those who do not. This can lead to resentment because the former, who may be younger and have less experience might advance more rapidly in position and salary.

Professional/Non-Professional Relationship

Information Communication Technology allows some of the tasks formerly performed by professional librarians to be passed down to paraprofessionals, clerks or, in some cases library users themselves. This trend is well represented in the philosophy put forward by German (1987).

- No professional should do a task which can be performed by a paraprofessional.

- No paraprofessional should do a task which can be performed by a clerical staff member.

- No human being should do a task which can be performed by a machine.

- At the same time while professional librarians have passed certain activities down to paraprofessionals, they have taken others on- in system development and implementation, in learning system capabilities, in teaching, and in the design and operation of new services.

Training Needs

Information Communication Technology has brought with it the need for more on-the-job training of staff and for the upgrading of their skills especially when new technologies are introduced or significant changes are made to an existing system.

While some staff members will be eager to learn new skills and acquire additional experience, others may feel that too much of their time is spent in adapting to a changing technological environment at the expense of direct service to the public and that Information Communication Technology has brought about training overkill.

Job Satisfaction and Self- Image

It seems widely accepted within the library profession that Information Communication Technology has improved job satisfaction and the self- image of the professional librarian and other members of the library's staff. This is understandable. The professional librarians have relinquished some of the jobs they consider less important, while

the paraprofessionals and clerical staff have also given up some of the most routine tasks (to the computer) and taken on others that are more satisfying and that they perceive as more "professional".

One of the reasons why librarians have embraced Information Communication Technology with enthusiasm is the expectation that this will improve their image with library users and perhaps eventually increase their status within the communities served.

A number of surveys have looked at the effects of Information Communication Technology on the attitudes of library workers towards their jobs. The attitudes of professional staff members are compared with those of non-professionals. The results do reveal some agreement that Information Communication Technology has made library work more challenging and interesting. Support for this is not very strong. In fact, some feel that the challenge of their jobs has remained the same or even declined than feel that the challenge has increased.

Rather surprisingly, although, Information Communication Technology should have increased the challenge and interest for non-professionals, since they may now be handling more of the tasks previously handled by professionals that is not strongly supported. Indeed, more non-professionals feel that creativity has been reduced than that it has increased.

Contact with Users

It is sometimes claimed that the librarian of today must be more extrovert than the librarian of yesterday. The implication behind this claim is that the librarian now spends more time in direct contact with library users. There is some justification for

this belief in the sense that more professional hours are now devoted to public services, rather than the behind- the -scenes technical services, than was time in the past. Nevertheless, the fact that librarians now spend more time being trained and in committee or task force meetings, coupled with the fact that paraprofessionals may now provide more of the public service functions or library users perform them for themselves, suggests that hours of direct contact between professional librarians and the public may actually have declined.

In some University libraries in Nigeria, contact between users and non-professional members of the staff may also have declined as users take on more activities for themselves.

Deprofessionalisation

Not all librarians are of the belief that Information Communication Technology will improve their image and status. Harris, (1992) points out that improvements in the ability of librarians to exploit Information Communication Technology may have caused a deterioration in other expertise. Librarians who complain that the amount of time they now spend with electronic resources threatens their familiarity with the printed sources. Harris claims that deprofessionalisation occurs when a profession looses control over its knowledge base and service ideal.

Lancester (1991) has suggested that the profession may well be losing its service ideal because he believes that many librarians have become mesmerised by the glamour of Information Communication Technology, seeing ICT as an end in itself rather than a means of improving range, scope, and quality of services.

Harris (1992) on the other hand sees

the profession losing contact over its knowledge base. Skilled professional cataloguing have been replaced by network copy cataloguing and she believes, end user searching of CD-Rom and other databases will mean demand for the services of a search specialist.

Employee Fears

Fine (1986) has pointed out that about twenty per cent of the members of staff may be resistant to technology even today. Much of this resistance stems from fear, which may be associated with the introduction of a new system or with changes in an existing system. The following are possible reasons for employee fear:

- technology itself;
- cost of error;
- ability to learn;
- job security;
- reduced socialisation; and
- health effects etc.

In some cases, the fear is of the technology itself and its possible effects, such as the fear that books will be replaced.

A second fear is that of making a mistake that will damage the equipment, wipe out a file, or otherwise prove costly to the organisation. Older employees in particular may be afraid on how to use a new system. There may well be some justification for this because the University libraries rarely have enough resources to train all staff members adequately especially in a situation in which the system is in a period of rapid change. Some employees may fear that their jobs are threatened, although, Information Communication Technology in the University libraries in Nigeria has led to redevelopment of staff and

changing responsibilities rather than actual staff reductions. A related effect of ICT on staff also touched upon earlier, is that of deprofessionlisation and the loss of traditional skills (e.g. the fear that print-related skills will decline as more reference work involves use of electronic resources). Other fears related to reduced socialisation if tied to a terminal for a large part of the day, is that one will have less contact with other staff members or with the public.

Finally, there may exist fear of possible health hazards. While extreme cases may reflect simple paranoia, some justification exists for concerns relating to less serious effect, such as backache and eye strain. Most fears are best handled by giving employees greater involvement with the Information Communication Technology through demonstrations, workshop and visits to the university library in which the technology to be introduced is already in place.

Resistance to Information Communication Technology

Resistance to Information Communication Technology can take various forms, such as:
decline in quality or quantity of work; unwillingness to change or to learn; absenteeism or lateness; behavioural problems (apathy, boredom, negativism; withdrawal or even aggression) and in extreme cases physiological problems such as headache, nausea or high blood pressure.

Factors that Determine Information Communication Technology Acceptability

The following, according to Olsgaard (1985) are the factors that determine whether or not, Information Communication Technology is introduced successfully into the University library system.

(1) System capabilities (Technology problem).

(2) Planning and implementation of transition (Organisational problem).

(3) Management Commitment (Organisation and behavioural problem).

(4) Minimisation of resistance (Behavioural problem).

Factors Affecting Successful Introduction of Information Communication Technology

The problems occur in a logical progression from those that are purely technological to those that are behavioural.

First and most obvious, the system adopted must be effective in doing what is supposed to do. Second, the transition to the new system must be well planned and the staff well trained. The management must be strongly committed to the system and be able to convey the strength of this commitments throughout the sections in the library without prejudice.

Finally, management must work to minimise conflict among individuals or departments related. For example, to changing responsibilities and organisational structure - and to minimise the effects of resistance in those individuals opposed to the change. Jackson (1993) points out that the addition of a new technology, if it is to be well accepted, must be carefully planned and

integrated into existing procedures. If not, it will probably be relegated to infrequent use or used only in extreme rush situation. She was referring specifically to new document delivery systems but the principle applies equally to other technologies. Fine (1996) suggests that it may be a good thing that some employees resist technology. The manager should not necessarily dismiss such people as mere problems. Sometimes, those who resist have been able to use undesirable consequences of a proposed change that others have completely overlooked. She feels that healthy growth in a University library system can result from the tension that exists between those pulling for Information Communication Technology and those resisting it.

Olsgaard (1995) points to the fact that there exist two opposing views in the behavioural effects of technology:

(1) The more experience one has with technology, the more positive one is about its capabilities.

(2) The more one uses the technology, the more aware one is of its limitations and dangers.

While most librarians seem to fall into the first group, this situation may be changing. The introduction of computers into libraries at a significant level in the 1970's was met with hostility, skepticism or indifference among many members of the profession. This eventually gave way to somewhat pervasive overenthusiasm and overoptimism regarding the benefits of technology. While this skill exists to a very large extent it is encouraging to find that some librarians are now more realistic in judging the effects of Information Communication Technologies in the Universities library system in Nigeria.

Conclusion

ICT has become a vital instrument in various aspects of human endeavour and practices. In the context of Nigeria Universities Libraries, ICT is a technological revolution whose utilisation has been somewhat limited but whose potential for diffusion holds great promise in the development of Nigerian Universities Libraries. In so much as advanced technology such as ICT is not directly transferable, its assimilation in Nigerian Universities Libraries require appropriate human resources with competence in innovative and adaptive utilisation of ICT within the respective local contexts of Nigerian Universities Libraries.

The task of evolving a system of developing such Appropriate Human Resources (AHRs) is undoubtedly a challenging one. It needs to be adaptively planned and programmed into overall ICT utilisation programmes in Nigerian Universities Libraries. This suggests that policies/strategies and systems of education and training programmes, quite different from those abroad are needed in Nigerian Universities Libraries. Nigerian Universities Libraries should therefore reduce their tendency to spend solely on the expatriates in providing ICT solutions to their problems. They should endeavour to initiate and control the process of ICT skill and know-how acquisition through an internally generated programme of Appropriate Human Resources Development (AHRD) backed up by enabling policies/strategies to achieve these respective objectives of adopting ICT. It is hoped that this paper has provided the necessary impetus in this direction.

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