

SYReLIB – FUTURE STRATEGY FOR ENHANCING THE GLOBAL CONNECTIONS OF SYRIA’S ACADEMIC COMMUNITY

Purpose of the report

The European Commission’s TEMPUS programme encourages collaboration and the sharing of best practice between universities in the European Union member states and those in neighbouring countries. The SYReLIB Project is a Structural and Complementary Measure within the TEMPUS-MEDA programme, supported by grant of about €150,000, and was undertaken between April 2007 and November 2008.

The principal objective of the SYReLIB project was the development of modern electronic library and information services in Aleppo University and Al Ba’ath University that could act as a model for other Syrian universities. The European partners in the project were the Robert Gordon University, Middlesex University, and eIFL.net, an international consortium that supports national negotiations for commercial electronic information services and advocates the development of locally produced digital resources.

As part of this pilot project, it was agreed to prepare some guidelines to provide a basis for future action in the universities in Syria. This report briefly reviews the implications of current trends in scholarly publishing, the state of university libraries in Syria, and specific issues identified during the activities of the SYReLIB project. It is based on discussions with senior personnel in various Ministries, several universities, specialist library services, and the Department of Library Science in Damascus University.

Summary of issues identified

The last 30 years have witnessed a major transformation in the way in information is transmitted, stored, retrieved and managed, and in the use of information to enhance learning. University libraries generally have responded to these changes by adopting new technologies and implementing new services to support learning and research in their institutions. However, Syria’s university libraries appear to have changed little during that time. In part, this could be attributed to the limited demands that the national economy has placed on the universities as research centres to drive progress, and the outmoded approaches to teaching that have also been permitted to exist.

The following issues need to be addressed to modernise the universities and their libraries, to enable them to make a more effective contribution to the economic and social progress that the government now seeks to achieve.

1. The other state funded universities should be expected to introduce both electronic library management systems and Institutional Repositories to publish their research output on the Internet. At this stage in their development, there may be advantages in all the universities in the country using identical systems.

2. Funds will be required to enable the university libraries to employ additional staff to create complete catalogue records for their entire collections, and then to implement rapidly the other services that their automated library systems make possible.
3. Further attention needs to be given to developing the staff numbers and technical capability that is required within the universities to deliver the training in basic computer skills that has been prescribed by the government.
4. Further attention needs to be given to developing information literacy in the universities, enhancing not only teachers' skills in new pedagogical approaches but also library staff capacity and skills to provide the training and support required for searching for printed and electronic learning resources.
5. The university regulations regarding the electronic deposit of theses in the Repositories may need to be revised to make deposit mandatory and to take account of international copyright legislation.
6. Universities should consider including in their Repositories publications by members of staff and research students that appear in journals published in other universities or countries, taking account of what is allowed by the copyright owner.
7. The role of the Assad National Library as a depository for the permanent preservation of the electronic media produced in Syria, and the cost of implementing such a policy need to be considered, and any necessary legislation implemented.
8. The use of electronic information in the Syrian universities could be further stimulated, particularly in the humanities and social sciences, by subscribing to appropriate online indexes to Arabic publications, such as the 'AskZad' and 'Multidata' services.
9. The introduction of an Electronic Document Delivery service (such as Ariel[®]) should also be considered, to facilitate resource sharing between the Syrian University libraries and internationally.
10. There is a need for a consortium of Syrian university libraries to be established, under the aegis of the Ministry of Higher Education, to negotiate licences for electronic journal services and other databases, and to ensure that subscriptions are reviewed and renewed on a regular basis. eIFL is willing to assist with the negotiations. Responsibility for agreeing contracts on its behalf needs to be clearly delegated to a single individual.
11. The private universities should be encouraged to introduce library management and electronic document delivery systems to enable them to participate in inter-library cooperation and enhance the national information resources. The advantages and disadvantages of participation by the private universities in any journal-purchasing consortium should also be considered.
12. The universities should consider migrating their scholarly journals to an electronic medium to make them more widely available through the Internet.
13. Staff capacity in the Universities' Information Technology Departments will need to increase to accommodate the additional demands that the new library systems will create.
14. Major changes are required in the admission requirements for the undergraduate course in the Department of Library and Information Studies in Damascus University to enhance the professional commitment of the students enrolled. The Department also needs an increase in the resources available to support the course to enable a wider range of aptitudes to be

developed by its students, and to develop a curriculum more relevant to the job market's requirements.

15. The staffing of the University libraries needs to be re-established on a more professional basis, with a senior manager educated in librarianship tasked with oversight of all the libraries within each university, assisted by a cadre of qualified librarians who are recognised as specialists.
16. Consideration needs to be given to the possible development of a Masters Degree open to enrolment by graduates in other disciplines, possibly taught by distance learning through a Virtual Learning Environment.
17. There appears to be a need at national level to coordinate planning of the modernisation of pedagogical practices in the universities, the availability of electronic learning resources and the premises to accommodate them, the development of campus networks to deliver them, and the enhancement of the skills required by teachers, students and library staff to maximise benefits from these new resources. The necessary changes, their inter-relationship, and the sequence for their implementation should be defined and timescales for their completion agreed.

Background – current trends in teaching

There is now much greater interaction between universities and employers. Employers are taking a greater interest in the relevance of courses, the subject knowledge of graduates, and the personal attributes and skills that the courses seek to develop. The increase in international trade and the emergence of new globally-distributed industrial corporations creates demands in local labour markets for employees with specialised knowledge and skills comparable to those found elsewhere. This has created a requirement for curricular revisions, but it is probably more significant that surveys of employers in the industrialised countries reveal that they are even more interested in graduates' skills in problem solving, decision making, and the presentation of a case; skills which require the ability to think critically, to analyse evidence, and to reach sound conclusions independently. Their employees' ability to learn continually and independently is also seen as essential in facilitating adaptation to change. These demands are compelling universities to adopt teaching methods that emphasise students' independent use of a wide range of information provided by their libraries in both printed and electronic media.

Background – current trends in scholarly communication

During the last century, and especially during the latter half of the century, educational and technological developments throughout the world have resulted in a substantial increase in scholarly publication – the so-called 'information explosion.' However, university libraries became unable to acquire all the growing number of printed journals, and teachers' and researchers' access to all the knowledge emerging in their field was limited. The visibility of the outputs of much research was reduced and academics, particularly in the less wealthy countries, became increasingly isolated from their international peer group. As a further consequence, economic development in those countries was inhibited.

Experiments in publishing journals electronically began some 30 years ago, and electronic publication has increasingly become the norm for journal publishing once the Internet came into common use. It is estimated that nearly 90% of the scholarly journals published in English are now available online, and similar developments are taking place in journal publishing in many other languages. The new business model for selling subscriptions to electronic journals has resulted in most libraries acquiring a much wider range of journals than previously. Publishers have invested heavily in reproducing electronically many of the older issues of their journals. International assistance in negotiating lower cost or free subscriptions for national consortia of libraries has improved access to journals in developing countries. The academic community has generally welcomed these improvements in access to journals.

However, these changes have highlighted that, for a number of reasons, international scientific publishing has been particularly dominated by the publishers of English language journals, handicapping those members of the academic community, staff and students, whose ability to write in English or read journals published in English is limited. Efforts are now being made to encourage the migration to electronic format of journals in Spanish, Portuguese, and major non-European languages, not only to meet the needs of native speakers, but also to make those journals more widely available to the international scientific and scholarly community. Despite a shortage of relevant electronic publishing skills in many Arab countries, some Arabic language journals are beginning to appear online.

A number of other developments were taking place at the same time. Academics in some disciplines had become frustrated by the length of time before the results of their work were published in the printed journals. About 15 years ago some began to establish 'Open Archives', computer servers through which doctoral theses and staff research papers could be immediately published on the Internet and made widely and freely available. Universities have adapted this idea to create 'Institutional Repositories' as a way of raising global awareness of their research.

A number of agencies also began to encourage journals published in developing countries, which had hitherto suffered from limited circulation and visibility, to transfer from print to electronic format. As many of the printed journals produced in the developing countries were sponsored by universities, research councils and professional associations and often made available free of charge, that tradition has been extended to their electronic journals, which in any case tend to be less expensive to publish and distribute. This has led to the more widespread adoption of new business models known as 'Open Access' in which the content of journals is made available free of charge, with the income required to sustain publication being raised in ways other than subscriptions. About 10% of the world's scientific and scholarly journals may now be available on Open Access.

The development of new media, particularly during the last 10 years, has thus led to changes in the information resources that are readily available. In turn, significant changes have taken place in the nature of library services, the status of libraries within organisations, the responsibility and tasks undertaken by librarians, and the knowledge and skills that they require. Continued growth in

the volume and range of scholarly material available on the Internet can be expected, requiring further adaptation by institutions and their library services.

Background - publishing in Syria

Currently, electronic publishing in Syria mainly takes the form of a few e-books that are simple reference texts, and suffers from copyright piracy to such an extent that it may be a deterrent to investment in other forms of e-publishing by the local commercial publishing companies. However, at least one Syrian publishing company is steadily digitising its entire 50-year output of academic books against the day when it could safely and profitably sell the content on the Internet.

Scholarly journal publishing in Syria is undertaken by the universities. These comprise papers written by the staff of the university concerned and papers from academics in other universities and Arab countries. For promotion purposes, academic staff are required to publish in refereed journals in Syria or abroad, in Arabic or any other language, and the minimum number of papers required for promotion to each level in the academic hierarchy has recently been doubled. In many other countries, attention focuses more on the quality of published outputs than on quantity, and is judged by the extent to which they are cited by other authorities in the field. The visibility of publications has thus become much more critical, and it is being noted that papers published in Open Access media (e-journals or Repositories) are attracting more citations.

Studies of the use of electronic information in other Arab countries have highlighted students' limited ability to read scholarly material in English, which is currently the principal language used in electronic journals. However, little attention has yet been given to the production or acquisition of information content in the Arabic language, which could facilitate the introduction of heuristic learning approaches. Moreover, there appear to be no arrangements in the universities for regular progress reviews to ensure that staff continue to keep up to date and publish material that could be useful for teaching purposes. The publication of teaching materials within Virtual Learning Environments, such as the open source system 'Moodle,' has become common practice in universities in Europe and North America.

In any case, the use of externally published material would be limited without improving the availability of international indexing and abstracting databases, especially the online databases indexing Arabic language publications, which would be particularly useful for scholars in the humanities and social sciences. However, those services that are available (AskZad, and Multidata) do not even appear to be well known.

Background - University Libraries in Syria

The Syrian government places great emphasis on education, and the Ministry of Higher Education is currently working on a strategy for the development of the Syrian universities, with some support from the European Union, which is aimed at improving pedagogy and teaching quality management. The Ministry is also

expanding access to higher education by permitting the establishment of some 20-30 private universities, and monitoring their academic standards.

Through its support for teaching and research activities, the library is the central organ of any modern university, and the entire character and efficiency of the university may be judged by its treatment. Regretably, outmoded forms of teaching persist in the universities in Syria, and are reflected in the services expected of university libraries. At present, a typical Syrian undergraduate student seems unlikely to have used a modern library before arriving at university, and may well graduate without ever entering the university library, having relied solely on memorising the lecturers' notes and prescribed textbooks. Recently, the Ministry attempted to initiate a move away the current didactic teaching practices with their heavy dependence on the memorisation. However, there appears to have been a lack of the coordination necessary to implement such changes. This initiative faltered for a variety of reasons, one of which was probably a failure to understand the demands that this would place on the university libraries to provide the necessary support in terms of collections and user services.

The collections of the university and faculty libraries appear to have developed on an unplanned basis, and contain much out of date material. Inadequate catalogues make it difficult to find particular items, even if they are available within a university, and prevent any attempt to share resources between libraries and between universities. Researchers cannot easily find up to date material, are generally unfamiliar with current information in their field, and are thus unable to maintain parity with their peers in other countries.

Journal collections are noticeably inadequate. There are over 16,000 scientific and scholarly journals published in the English language alone. Aleppo University libraries subscribed to only 325 printed journals in a variety of languages, and the number available at Al Ba'ath University seems to have been even less. Damascus University receives about 500 journals in Arabic and 500 in other languages. Most of journals available are received through donations or subscribed on a non-consistent basis. The last year has seen the introduction of some electronic journals, part of the Elsevier ScienceDirect service, funded by the Ministry of Higher Education on behalf of all the 5 Syrian state universities.

Automated library systems have been available for over 30 years, managing acquisitions, cataloguing, circulation and other routine tasks and providing a catalogue accessible online throughout the institution as well as globally via the internet. They are in use today in every university in Western Europe and North America. Online access to library catalogues, with in some cases a single search system covering the catalogues of many national and university library services, has facilitated resource sharing at national and international level. However, only one of the private universities in Syria has introduced such a system, and the selection of a modern electronic library management system for the libraries of Damascus University has only recently concluded, some 30 years after it was first recommended.

At present the Syrian Universities publish their own scholarly journals as printed publications, but the distribution of these outside Syria is limited, and the scientific and other scholarly research work undertaken in the Syrian universities

is consequently even less well known than it might be. Publishing in the universities is based on producing printed texts from electronic media, but there has not yet been any attempt to use the Internet to make the texts more widely available on campus or globally. The work of scholars in Syria would be potentially much more visible to their academic peers throughout the world if it could be made available on the Internet, and an increasing amount of Arabic language material would thus also be available to support changes in teaching practices.

Background - Information and Communication Technology in Syria

The estimated number of current users of the Internet in Syria is said to be only around 700,000 (out of about 20 million inhabitants). Use of online services in Syria in general and in the universities in particular has been inhibited by the national network's telecommunications bandwidth, and limited provision of networked PCs on campus.

Efforts to enhance the Syrian Higher Education Research Network's (SHERN) bandwidth are being led by the Ministry of Telecommunications and Technology. The bandwidth currently available is generally 2 Mbs, but it is expected to increase to 6 Mbs soon, and then to 34 Mbs which will make the international databases potentially more speedily accessible. Currently the universities are compelled to use other networks, which are subject to controls that inhibit their use to access external data services.

The Ministry of Higher Education now coordinates the development of the Syrian Higher Education and Research Network and significant progress has been made in establishing networks around the university campuses and increasing the number of networked PCs available. However, the constraints on the provision of these facilities by the limited availability of space in the existing university buildings does not appear to have been fully recognised.

Background - use of information resources

To facilitate the modernisation of teaching methods, it has been decided that all university students should be required to take a course that incorporates the basic skills in using computers, for example by studying for the International Computer Driving Licence (ICDL), for which the Syrian Computer Society is the local agent. However, there does not appear to be the capacity to deliver this ambitious goal. The consequences for the use of the computer laboratories for other teaching or for independent use by students do not appear to have been fully recognised. Teaching the course is likely to overload the available computer laboratories, which is being only partially addressed by purchasing some additional PCs. There is also reported to be a shortage of skilled instructors.

Students need more than just the relatively simple skills of operating networked PCs if they are to successfully adapt to new teaching and learning approaches. Independent learning is still a novel concept in Syria, and the full implications of implementing such a system may not be fully understood. In introducing networked information resources, no thought appears to have been given to

developing the students' skills in finding information and using it effectively (usually referred to as 'information literacy'). It is generally acknowledged that an Information Literate person is one who:

- recognizes the need for information
- identifies potential sources of information, including information that is computer-based or derived from use of other technologies
- develops successful search strategies
- accesses sources of information
- evaluates information
- integrates new information into an existing body of knowledge
- uses information in critical thinking and problem solving
- knows how to communicate information in an ethical manner.

Some of these skills can be developed in students by teachers who are themselves information literate; others require the collaboration of library staff trained in modern methods of information retrieval and evaluation.

A particular challenge in developing these skills comes from the students' limited ability to read material in Western European languages, particularly English, which currently dominate scientific and scholarly publishing.

SYReLIB Project – actions and issues

Both Syrian Universities have been provided with an electronic **Library Management System**, NewGenLib. Details of the system can be found on the web at: <http://www.kiikm.org/NewGenLib.html>.

The system was developed in India, and its functionality appears comparable to other similar systems available internationally. However, the software licence for each university cost significantly less than the price of other similar systems that have become well established in Western European and North American universities. It has the advantage that there is a local agent in Syria, Middle East Informatics (MEI) in Aleppo, which undertook the arabization of NewGenLib, and which can provide technical and training support. Other companies that supply similar systems tend to rely on a single technical assistance centre for the whole of Europe and the Middle East.

It has already been in use in Syria for some time in ICARDA, the international agricultural research centre near Aleppo, and has attracted the interest of the United Nations Food and Agriculture Organisation. Since its purchase for the two universities, it has become an open source product, with the software available free of charge, and has been selected for implementation in Damascus University Libraries.

The system facilitates the creation of an electronic version of a library's **catalogue**, with records in a format that meet international standards. It can link the catalogues of the many departmental libraries in the universities to reveal the total collection, and thus avoid unnecessary duplication. It can connect them all to the Internet, which will facilitate resource sharing between the University libraries in Syria. It also means that foreign scholars interested in publications that are difficult to obtain outside Syria will become aware of the location of copies in Syrian university libraries, and that may encourage them to

visit Syria to use the libraries and at the same time to make contact with their academic peers.

Several uncoordinated efforts had previously been made to use computers to catalogue some of the library collections at Aleppo University, and these records have now been transferred to the NewGenLib system. More progress in creating new records has been made at Aleppo University than at Al Ba'ath University, which must in part be attributed to the efforts of the Manager responsible for all the Aleppo University's Library services. **Training** has been provided for staff in both universities, and both universities are now creating records in NewGenLib for some of the faculty libraries by copying catalogue records online from national libraries in other countries, which is the usual method for catalogue record creation. Some of the training effort was wasted because library staff who had been trained were re-assigned to other (non-library) posts in the universities.

About 15-20% of the collections of Aleppo University Libraries are now recorded in the NewGenLib system, and about 5% of Al Ba'ath University libraries. However, there is, as yet, no strong commitment to continue to progress the work of cataloguing the libraries' book collections rapidly after the SYReLIB project funds are withdrawn.

Once the cataloguing has been completed, the library management system could be used to record loans from the libraries, and the database of staff and student records necessary to facilitate the introduction of this service may exist. However, it is clear that the challenges in planning for and implementing this facility and supporting administrative tasks such as purchasing books and journals, are not fully understood because of the limited professional staff base.

The NewGenLib system includes an **Institutional Repository** system that is compatible with international standards for Open Archives. Al Ba'ath University had developed its own software for a repository system, and has stored electronic versions of some recent theses, but the system does not appear to have been entirely compatible with international standards. At Aleppo University theses approved during the last few years are currently held on CD-ROM. Both universities have started uploading their PhD theses into the new Repository, and about 900 records have been created at Aleppo University. Some **training** has been provided for staff in both universities in the implications of implementing Institutional Repositories. It is not clear whether the universities have promulgated academic regulations requiring students to submit theses in electronic format, and to address issues such as commercial confidentiality, third-party copyright, etc., although this could be quickly accomplished.

Subject to any copyright restrictions, the Repositories could also include staff publications that appear in journals published in other universities or countries, so that the research capacity of the universities is more fully demonstrated to external peers. At present there does not appear to be any consistent attempt to collect these publications. Guidance on the copyright restrictions imposed by many journals can be found on the Sherpa/Romeo project web site.

It would be possible to include the contents of the university journals in the NewGenLib Institutional Repositories. As a future development, the universities

might consider introducing the 'Open Journal Systems' software, which manages all aspects of electronic publishing and is also an open source system, available free of charge.

Some additional **e-journal subscriptions** to complement the existing national subscription to Elsevier's Science Direct have also been purchased. One-year licences for the e-journals offered by Gale Cengage's GeneralOneFile, Cambridge University Press and BioOne were purchased by the SYReLIB project, adding over 11,000 titles in total, at substantially reduced prices negotiated by eIFL. In addition, awareness of the many high quality 'Open Access' journals that are now published on the Internet and other databases for which no subscription is payable is being raised through the development of links from the universities' web pages. The project established a **model webpage** at <http://www.lr.mdx.ac.uk/tempus/syria/eresources.htm> for the participating universities to adapt for their use. This increased access to external publications could assist more Syrian academics in keeping up to date in their subject, make their future research more in line with research in the rest of the world, and help to promote international institutional collaboration. **Training** in the operation of these systems has been provided for some university library and IT staff, and the potential benefits have been presented to small groups from the academic community. The training in the use of these new resources that has been provided has been well supported by research students, but attendance at training sessions by academic staff has been poor. There does not appear to be the capacity or capability in the university libraries' staff to expand the training effort to ensure that all academic staff and students are aware of these new resources.

At Tishreen University administrative and financial management systems seem to have presented a major barrier to the renewal of subscriptions to some electronic journals to which the university library had subscribed before the recent Ministry initiative. Delays in paying a subscription might have been tolerable when late payment of subscriptions to printed journals simply resulted in late delivery of issues of a journal. Non-renewal of a subscription to printed journals resulted only in the loss of recent issues; copies already purchased remained in the library. However, delays in paying a subscription to an electronic journal, or failure to renew a subscription, result in the publisher automatically and immediately barring access not only to forthcoming issues, but also to the issues that appeared during the period when the subscription was valid. Effective management of electronic journal subscriptions and access to them by the academic community is put at hazard by existing procedures and a failure to delegate clear and sufficient responsibility for the libraries' acquisitions budget to senior library managers.

The price of the journals purchased with SYReLIB project funds was negotiated by one of the partners, eIFL.net, a not-for-profit foundation that exists to provide negotiating support for consortia of libraries in developing countries. The price of subscriptions to electronic journals is much more open to negotiation than the price for printed journals, but the negotiation is also more complex. eIFL's experience and expertise enable it to assist consortia to secure the most advantageous terms. Discussions about the creation of a national consortium to purchase electronic journals for Syrian libraries have not yet made much progress, and it is not clear who will lead the negotiations for the renewal of the

national licences and who would have the delegated authority to sign contracts on behalf of the consortium.

Resource sharing

It has long been recognised that no library can purchase all the publications that it might wish, and libraries have established regional, national and international schemes of cooperation to compensate for these limitations by collaborative acquisition policies and lending material between libraries. Studies conducted in other Arab countries have indicated that an increase in interlibrary loan requests has been prompted by access to online database services. The development of means of cooperation among academic libraries within Syria would clearly be necessary to respond to the potential demand resulting from access to the online catalogues of the university libraries, electronic journal services, and any additional online databases. Interlibrary lending has not been widespread in the Arab countries, but the use of Electronic Document Delivery could offer the opportunity to establish a secure national Inter-Library Loan service within Syria, and provide more rapid links to international resources.

Human resource development for libraries in Syria

Although belated, the developments now taking place are welcome, but it is clear that the necessary professional and managerial infrastructure does not exist to enable the Syrian university libraries to take full advantage of these new systems and to develop appropriate services. Syrian libraries and information services are generally disadvantaged in exploiting new technological tools not only by a lack of equipment but also as a result of a shortage of staff who are both computer and information literate.

Education for librarianship and information sciences in Syria is provided by a Department in Damascus University, whose staff also teach a course in Tishreen University, visiting Lattakia on a daily rota. The courses do not enjoy a high status, and enrol students from the lower end of the spectrum of those admitted to university, who have little choice of subject and who are unlikely to have a strong commitment to the profession. In Western Europe and North America, enrolment on specific courses depends on student choice, provided that they achieve the required high school grades, and the number of students admitted tends to reflect the requirements of the job market.

The recently revised curriculum of the Department of Librarianship in Damascus University appears to cover the main subjects that might be expected in a course on librarianship, but has an admittedly theoretical bias. Senior librarians in the country who completed their professional education in Western Europe have expressed serious reservations about the knowledge, skills and attitudes of most of the graduates from the Department of Library and Information Studies. The initial lack of practical aptitudes in the Department of Librarianship's graduates seems to be a cause of particular concern. However, the Department has few of the resources that might be expected to enable its students to develop more adequate skills in the use of networked information. The Department's computer resources - about 20 PCs for nearly 2,000 students - are wholly inadequate.

Western European Universities have typically provided networked PCs with a ratio of PCs to students between 1:6 and 1:10.

About 500 students are admitted each year in Damascus, and the new course in Lattakia enrolls 200. It is a 4-year undergraduate programme, and a significant proportion of students fail to complete the course. Despite the large number of students who do eventually graduate in this subject, relatively few of them are employed by libraries in Syria. Relatively few of the Department's students could expect to find jobs in conventional libraries because of the size of the current job market, but the potential for students' information handling skills to be applied in other occupations does not yet appear to have been recognised. With some further enhancement, the curriculum could be diversified to create a second track with a new emphasis on information management, the students could be well equipped to manage a variety of information related tasks, such as those likely to be created by the Ministry of Health's new Health Information Data system.

Faced with complex and rapid changes, the role of the manager of a University Library has become particularly challenging, in advocating the necessary changes to the university management, securing the funding, and engaging the commitment and enthusiasm of the library staff. It demands a high level of professional knowledge of librarianship as well as managerial and leadership skills, and in many universities in Western Europe and North America it has long been the case that the position carries the status (and salary) of a University Vice President. At Aleppo University, the Manager of the University Libraries has no background of formal education for librarianship, and reports to a Vice-President. At Al Ba'ath University there is no one with overall responsibility for the libraries, which are managed by staff assigned by the relevant faculty, and developments have been led by the head of the computer service.

The staff of the Department in Damascus University also recognise the need to develop individuals with the higher level of competence required for leading development in the universities' libraries and other institutions' specialist information centres. The Department has approval in principle for a Masters Degree that offers advanced training for graduates from its own Diploma programme in librarianship.

Library staff who are not graduates in librarianship are often graduates in a variety of other disciplines. They generally appear to be regarded as part of the general professional and support staff of the universities, rather than treated as specialist professionals, and can be moved to other kinds of employment. This does not engender any commitment to service development on their part. It was noticeable that there are some library staff in whom that commitment and enthusiasm are evident, and there appears to be a need for a small number of staff to be given suitable opportunities to develop to a greater extent than is possible through in-service training.

Library work in a university, or a commercial or industrial research centre, requires some graduate-level familiarity with the subjects under consideration there. The role of a librarian in a modern university is similar to that of a teacher, as they are expected to contribute to the development of the information literacy of the students and academic staff, through teaching not

only the skills required to find relevant information, but also those required to evaluate its authenticity and authority. The pattern of study in Western Europe and North America recognises this, providing opportunities for graduates in disciplines other than librarianship to enrol directly into professional Masters Degree programmes in Librarianship and Information Management. Changes in the normal entry qualifications for Masters Degrees, and the development of an appropriate curriculum and pedagogical approach would be required for the introduction of a similar programme in Syria, but experience elsewhere suggests that it would attract high level graduates who had recognised and were motivated by the significance of information provision in the development of their initial academic discipline.

Adequate numbers of highly motivated staff, with appropriate qualifications and opportunities to regularly update their professional expertise and enhance their qualifications, are the foundation of any successful modern library or information service. Staff capacity in the Syrian university libraries varies widely. Damascus University is able to recruit easily from amongst the graduates of the University's Department of Library and Information Studies. However, only about 8 are employed in Al Ba'ath University's 20 faculty libraries, and there is only one person employed in the libraries of the University of Aleppo who graduated from the Department. There appear to be a number of the Department's graduates employed in the private universities, as well as some who received their professional education in western Europe.

There appears to be little mobility in the job market. Young people in the provincial cities seem reluctant to leave home to study at university in Damascus. Students who have completed the course in librarianship in Damascus appear reluctant to seek employment in the provincial cities. One solution tentatively proposed by senior staff of Aleppo University has been the establishment of a Masters Degree programme in Librarianship in Aleppo. There may, however, be many reasons underlying the apparent lack of mobility, such as salary levels, career prospects, availability of housing, and family ties. The underlying factors need to be explored carefully before appropriate solutions can be put in place. One solution might be the introduction of a distance learning programme, that could support students not only in Syria but also in other Arab countries.

Staff in the Department are well aware of the need to further revise their portfolio of courses, curricula, and teaching methods to enable the Department's graduates to make an effective contribution to the modernisation of the country's libraries and information services, but struggle to achieve appropriate changes not only because of a lack of adequate resources and the overwhelming number of students directed into the Department by the current admissions system, but also their relative isolation from the mainstream of professional developments. Several of the younger members of staff have been selected for postgraduate training in western Europe, and will clearly make a valuable contribution on their return. It will inevitably be some time before they are able to make a significant contribution to development.

In addition to the library staff, it should also be noted that the new electronic systems will place additional demands on the universities' Information Technology Departments. The number of staff and the technical skills appear to

need some significant enhancement to implement the necessary changes in library systems.

National planning and coordination

Many countries have seen the advantages of coordinating the efforts of its publicly funded library and information services. No such body appears to currently exist in Syria.

Damascus University was once designated as the centre for Syria's Directorate of the Universities' Libraries, but this role persisted only during the early development of the newer universities and their libraries.

In February 1994, the government's National Information Center supported the creation of the National Coordination and Cooperative Committee for Information to work with existing organizations to create and maintain a national database with a uniform documentation system. The National Information Center has been collecting and preserving documents electronically, but does not appear to have a remit to collect research outputs.

The Assad Library operates under the aegis of the Ministry of Culture, but might be expected to act as the research library of last resort within the country, one of the key roles commonly adopted by the National Libraries in other countries. The copyright legislation in Syria appears to cover electronic media, but there do not appear to be any arrangements for legal deposit covering electronic publications, nor any plans to create a national electronic archive to provide a permanent, secure environment for locally produced electronic content. The Assad Library's role in preserving the national heritage in electronic formats, and in collaboration with the universities and their libraries in supporting research needs to be reviewed.

Conclusion

The issues identified earlier in the report on this pilot project need addressing to enable the Universities in Syria and their libraries to achieve modern standards in the provision, use and dissemination of information in support of teaching and research, and there are a number of ways in which this could be done. Solutions depend on policy decisions that can only be made in Syria by the appropriate authorities who would also be responsible for determining the timetables for their implementation and for allocating the necessary financial resources. The solutions could take the form of a further project, which might be sponsored by TEMPUS, some other international agency, or the Ministry of Higher Education itself.

As with any project, once the objectives and timetable have been determined, it would be important to assign responsibility for the project's completion on time to an individual with the commitment and energy to ensure its success.