

The Impact of ANKOS: Consortium Development in Turkey

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Background

ANKOS is the acronym for the Anatolian University Libraries Consortium (Anadolu Üniversitesi Kütüphaneleri Konsorsiyumu). While consortium development in North America and Europe was well underway more than four decades ago¹, it started in Turkey on the eve of the 3rd Millennium, when one State and three private university libraries signed a contract, initiated by Ebsco, for the joint purchase of two databases for 1999. Consortium development began in earnest a year later, when seven more State university libraries and the National Academic Network and Information Center (ULAKBIM) joined the Ebsco contract for 2000, nine institutions joined an agreement with Academic Press for IDEAL, and all twelve jointly subscribed to MathSciNet.

In late 1999, ULAKBIM secured an agreement with Thomson-ISI to mount a local intranet of its science and social science citation indices. ISI's sales representative then offered the libraries a 3-year consortium deal. Ultimately, 22 libraries accepted it, in spite of general unhappiness with the licensing terms and the pricing; but there simply was no agreement among ourselves about how to share the costs, nor did we have any expertise for negotiating such deals. This was the catalyst for the creation in May 2001 of ANKOS, which assumed the ISI contract and those with Ebsco, the American Mathematical Society, and Academic Press.

Summary of Accomplishments

From these modest beginnings, described in more extensive detail by the founding director of ULAKBIM², a phenomenal level of activity in consortium building among the Turkish university libraries has taken place. The rapid growth in the number of members as well as the number of databases licensed is illustrated in figure 1, So far, shared investment has been made only for electronic products but in future may well include integrated library systems software and print book purchases, as well as ILL and other joint endeavours. Within the past two years, ANKOS has concluded agreements with 20 suppliers, under which 28 databases are licensed, including the first two for e-books. In 2004, 78 libraries joined one or more contracts, entailing a total investment of more than U.S. \$12,000,000. Figure 2 shows the growth in the number of Members joining the contracts for the databases licensed in 2002, 2003 and 2004.

A significant achievement in the past years was creation of a model Turkish national site license (TRNSL)³ and related licensing principles, crafted by the ANKOS Site Licensing Group and adopted by the ANKOS members at the semi-annual general assembly in October 2002. The negotiations for 2003 contracts were based on the model license, which corresponds essentially with the primary characteristics of model licenses of other national consortia while catering to the unique requirements of ANKOS. Among other things, the TRNSL enables the consortium to add new members to existing contracts as the consortium grows, protects the consortium against default or abuse by any Member, and stipulates the legal jurisdiction as being Turkish law and Turkish courts.

Figure 1: Growth in Numbers of Members and Licensed Databases

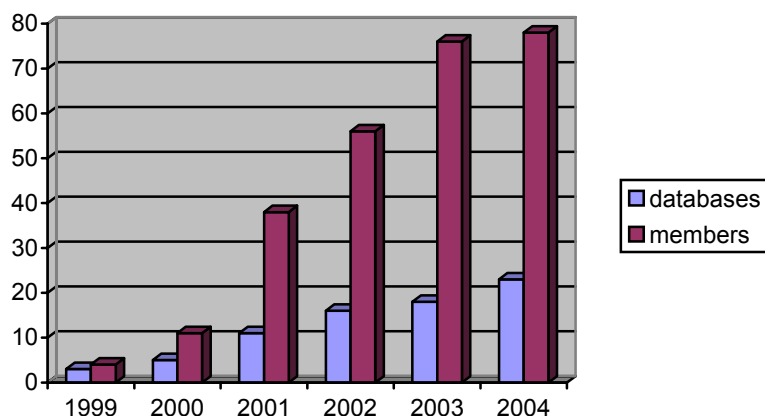


Figure 2: Table of Licensed Databases with Number of Members Participating

| Databases | # Members-2002 | # Members-2003 | # Members-2004 |
|---|-----------------------|-----------------------|-----------------------|
| Association of Computing Machinery | 9 | 10 | 9 |
| American Chemical Society | - | - | 14 |
| American Institute of Physics | - | - | 15 |
| Blackwell | 6 | 18 | 26 |
| Bowker (BIP, Ulrichs Web) | - | 5 | 7 |
| Cambridge University Press | - | - | 7 |
| Ebrary | - | 7 | 7 |
| Ebsco (Acad Search Elite/Premier, Business Source Premier) | 16 | 34 | 40 |
| Emerald | - | - | 14 |
| Engineering Village 2 | 13 | 17 | 17 |
| Gale (Exp Acad ASAP, General Business File) | 8 | 14 | 13 |
| IEEE | 6 | - | 21 |
| Institute of Physics | 14 | 22 | 22 |
| ISI Web of Science | 34 | 40 | 50 |
| Kluwer Online | 20 | 30 | 33 |
| MathSciNet | 14 | 15 | 15 |
| Micromedex | 3 | 4 | - |
| OVID | - | 9 | 15 |
| Oxford University Press | - | 18 | 24 |
| ProQuest (ABI Inform, Agricola Plus Text, Digital Dissertations, Academic Research Lib, Medical & Health Package, Science & Technology Package) | 33 | 47 | 55 |
| Safari e-Books | - | 10 | - |
| Science Direct | 36 | 54 | 62 |
| Springer Link | 27 | 34 | 38 |
| Taylor&Francis | - | - | 17 |
| Wiley InterScience | - | 32 | 38 |
| Totals | 239 | 418 | 565 |

International Memberships

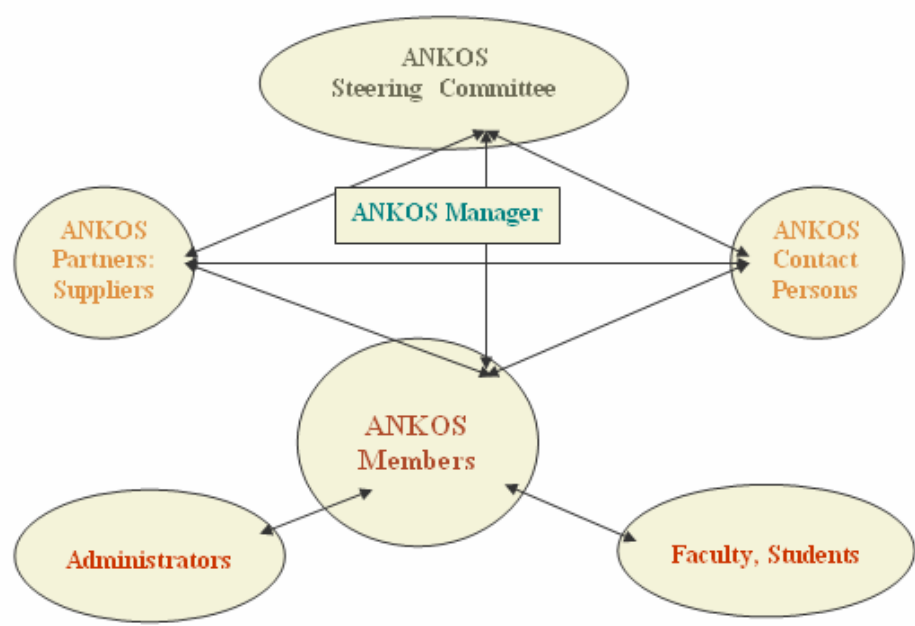
ANKOS is a member of ICOLC, and one or more Steering Committee members attend the annual e-ICOLC meetings. The ideas gained from interaction with other ICOLC members have been enormously helpful in our endeavours to develop ANKOS into a sustainable consortium. ANKOS joined e-SPARC in 2002 and is now actively promoting its aims throughout the country. Another joint effort in which ANKOS is involved is SELL (Southern European Libraries Link), comprised of the consortia of Greece, Italy, Portugal, Spain and Turkey. Also, with the increased focus on international cooperation, a number of ANKOS Member libraries have joined IATUL during the past two years. In June 2003, Middle East Technical University (METU) Library, which houses the ANKOS Secretariat, hosted IATUL's annual conference at the International Conference Center on the METU campus in Ankara. With the 3rd annual international conference of ANKOS hosted by METU immediately afterwards, many ANKOS Members availed of the opportunity to participate in the IATUL conference. These two major activities were followed immediately afterwards by the 3rd annual meeting of SELL, hosted by ANKOS in Cappadocia.

Organizational Structure

Owing largely to the fact that Turkey has a unitary form of government, the experience in developing a national consortium of Turkish university libraries has differed significantly from that in such other countries as Italy⁴ and Switzerland⁵, where consortium development has entailed collaboration on IT infrastructure as well as the shared investment in electronic resources. Essentially, the foundation of ANKOS is a group of university libraries that have voluntarily banded together to share investment in resources of mutual interest. Any library that joins at least one contract is a member of ANKOS. The general management of the consortium is vested in a Steering Committee comprised of the directors of 8 of the 12 founding institutions. Among the group is representation of four geographic regions of Turkey, as well as both large and small universities and State and private ones. Greater weight has been given to the two largest population centers – Ankara and Istanbul – which have the highest number of universities located in them. ULAKBIM also has a seat on the Steering Committee.

The Steering Committee is supported by the ANKOS Coordinator, located in the library of the ANKOS Chairman, who was elected by the Steering Committee from among its members. Each Steering Committee member, supported by one or more subordinate staff, is responsible for liaison with several ANKOS suppliers. The supporting staff are designated as ANKOS contact persons and are responsible to maintain routine communication with suppliers and ANKOS members about the supplier's products and database trials. Among other things, they troubleshoot technical problems, assist users with training and documentation, and keep the ANKOS Coordinator informed about all aspects related to the databases for which they are responsible. The basic structure of ANKOS is illustrated in Figure 3. Not shown in this chart are the working groups the Steering Committee has set up to deal with significant areas of its work. In addition to the Site Licensing Group mentioned earlier, two other groups are presently functioning. One is dealing with issues related to usage statistics; the other is developing and managing ANKOS' user education programs.

Figure 3: Organizational Structure of ANKOS



Mission and Activities

ANKOS means different things to different members; but its fundamental mission is to enable the university and research libraries to share cost-effective investments in electronic products and to jointly undertake related endeavours that ensure maximum access to the global information network for Turkish academics and students. Six primary activities are pursued in fulfilment of this mission, four of which are fairly standard among library consortia: liaizing with suppliers, organizing trials, and evaluating offers; negotiating deals and licensing databases; managing contracts; and analyzing usage statistics. The other two activities may not be as common but are vitally important in Turkey: promoting ANKOS to the academic community and government officials; and training librarians and users.

Because many Turkish librarians have no knowledge of English, they are unable to read the suppliers' promotional literature or to understand how to use various electronic resources. Thus, they have difficulty communicating to their rectors and provosts the importance of their libraries' participation in ANKOS contracts. To help members promote ANKOS in their institutions, assistance is rendered by means of translating materials into Turkish and making visits to university administrators and key faculty members to explain what ANKOS is doing and how their universities will benefit. We also provide information and make visits to key government officials to explain the importance of ANKOS.

Analysis of user statistics is yet to be fully undertaken in a systematic way, but it is one of the aims being pursued in earnest this year by the working group on usage statistics. Another major aim at present is to develop user education tools and provide skills training in database searching to librarians, so that they can do a better job of assisting their users. ANKOS representatives also conduct special training programs for users. These activities are initiatives of the working group on user education.

Communication

Communication with members is carried out on a continuous basis through a variety of ways. The ANKOS listserv is vitally important for facilitating communications between the

contact persons and the members at large, the Steering Committee, and the ANKOS Center. Educational seminars and product demonstrations are held frequently in the Spring and Fall at different venues around the country, often in collaboration with either of two national library associations – the Turkish Librarians’ Association and the University and Research Librarians’ Association. The Steering Committee endeavours to meet once a quarter, with two of its meetings held during the semi-annual general assembly held each Fall and the annual international conference held each Spring, which are attended by all members and open to librarians from non-ANKOS member libraries as well. The minutes of the Steering Committee meetings are circulated to all members, and the presentations made at the semi-annual and annual meetings are placed on the ANKOS Website.

Funding and Pricing Formulas

Perhaps our biggest challenge is the lack of central funding. Even if ANKOS were chartered under some legal instrumentality, which presently it is not, central funding would not be guaranteed. We rely, therefore, on the voluntary sharing of costs by our members, with each one being separately invoiced by the supplier rather than ANKOS paying a single invoice.

Another problem with funding is the vast disparity in members’ budgetary resources. It is popularly believed that the private university libraries are the richest ones, as they operate under educational foundations funded by wealthy benefactors. However, these universities are charities of their benefactors, and some of them are among ANKOS’ poorest Members. In fact, only one is among the richest members. Two others are among the top twelve in terms of budget but the very smallest in terms of FTEs and usage statistics. Four are among the poorest libraries. Differences between the richest and poorest State university libraries also are considerable. Only four of them have annual budgets of \$1,500,000 or more, while 21 have budgets of less than \$150,000.

In regard to abstract and indexing databases and aggregators’ full-image databases, every member joining the contract pays the same fee. In other words, the suppliers have imposed an equal sharing of the cost. Many of the smaller libraries see this as being unfair, given that their usage of all electronic resources is concomitantly small. In the case of publishers’ full image databases, contracts are based on the print subscriptions carried by each member in the previous 1 or 2 years, with a percentage of that cost added as the electronic access license fee. This causes problems, because the large libraries feel that they carry the burden of the entire consortium on their shoulders. Of course, they have more faculty and student users, and their budgets compared with smaller libraries reflect this reality. However, extensive duplication of titles held among them means that they do pay an inordinate share of the cost for access to the entire database, when they are already paying for a much larger portion of its content than the smaller libraries are.

Another problem is encountered in regard to prices based on FTEs. The distribution of FTEs, illustrated in figure 4, varies substantially among State universities, while enrolment in the majority of the private universities is relatively low, due to the fact that most are rather new and charge considerable tuition and fees. What is even more significant about the FTEs, in regard to licensing foreign databases, is that only 28 Turkish universities offer any curriculum in English. As seen in figure 5, English is the medium of instruction across the curriculum in most private universities, but very few State universities teach courses in English. In fact, not more 30% of the courses offered in State universities are taught in English, and most of them are at the graduate level with lower enrolments. The significant fact in regard to this data overall is that only 17% of Turkish students can use English language materials.

Figure 4: FTEs -- State versus Private

| # of FTEs | State Universities | Private Universities |
|-----------------|--------------------|----------------------|
| Less than 2,500 | 3 | 14 |
| 2,500-10,000 | 14 | 4 |
| 11,000-20,000 | 14 | 1 |
| 21,000-30,000 | 11 | - |
| 31,000-50,000 | 7 | - |
| Over 50,000 | 4 | - |

Figure 5: English Curriculum in Turkish Universities

| English Curriculum | State Universities | Private Universities |
|---|--------------------|----------------------|
| # of Institutions offering courses taught in English* | 15* | 13 |
| # of Students taking courses taught in English | 59,428 (6%) | 43,373 (95%) |

* Most have only partial English curriculum (i.e. only 30% of courses are taught in English)

Obviously, a compromise ultimately must be struck in such a way that all members feel they are carrying a “fair” share of the investment costs. Publishers are not concerned about this. They only look at the bottom line and try to ensure that they will profit from the deal. So it is the leadership of the consortium that must ensure its members that the deal struck with the supplier is a good one and that the way the cost is allocated among members is reasonably fair. In 2001, Turkey had a serious economic crisis, resulting in a substantial devaluation of the Turkish lira and a loss, literally overnight, to the State libraries of 50% of the dollar value of their budgets. ANKOS faced a crisis regarding the payments of the members’ fees for the second year of multi-year contracts. On the other hand, the private libraries were stable, since their budgets are appropriated in U.S. dollars. So, while all except one of the private libraries are among the smallest members, they assumed a somewhat larger share of the cost and thereby sustained our fledgling consortium. Based on the members’ acceptance of this approach, ANKOS now is asserting its prerogative of allocating the costs among its members. It is doing so on the basis of a scaled sharing of the fees similar to what the Consortium of Academic Libraries of Catalonia (CBUC) is doing⁶.

Licensing Decisions

How do we decide what to license? In general, for any database to be considered for licensing by ANKOS, it must meet the criteria set out in our licensing principles. Practically speaking, databases and products are considered on the basis of any member’s specific request or several members’ expression of general interest as well as offers put forward by suppliers. Decisions are taken after members’ feedback about the trials and related usage data, along with the suppliers’ offers, are evaluated. With regard to offers, user restrictions and any limitation on the number of simultaneous users are issues of particular concern.

Lacking experience and having no expertise in consortial work, our experience in negotiating contracts in previous years was rather uneven. We generally were too eager to enter into contracts for databases we wanted and could not afford except by making group purchases. We had no tools, such as a model site license, clearly framed licensing principles, or a pricing formula of our own on which to base our negotiations. So we usually were in a “take it or leave it” position vis-a-vis the suppliers with whom we were negotiating.

We have learned from our experience, however, and have gained strength and confidence from insights shared with us by friends in ICOLC. We are gratified that suppliers generally are receptive to the terms of the TRNSL and our licensing principles. What we have come to fully realize is that we are important to the suppliers who are trying to sell us their products, because we impact their profit margins. Thus, by asserting our own terms a bit more firmly and insisting on the prerogative of deciding among ourselves how we will allocate the costs of a contract, we now are obtaining agreements that are more favorable to our members.

Measurable Outcomes

To get a sense of the impact ANKOS is having on its Member libraries and their users, it is useful first of all to consider the situation in respect of the print collections held by Turkish university libraries. Compared with consortia in North America and Northern Europe, the average size of print collections is rather small. For example, the total number of print subscriptions held by Turkish universities from four major publishers (Elsevier, Kluwer, Springer and Wiley) is on average about 5% of the total number of journals published, whereas the average number of these publishers' titles subscribed by the libraries comprising OhioLINK is 25%⁷. Many of the libraries of the recently founded Turkish universities have no print subscriptions at all, and a significant number of the older libraries subscribe to very few because of insufficient funding. Given the limited size of print collections, ANKOS is greatly appreciated by both libraries and their users for having made thousands of additional journals available electronically. As set out in figure 6, the increases in the number of libraries joining ANKOS contracts is significant, and, concomitantly, the usage of full text electronic journals, evidenced by the number of downloads, is enormous.

Figure 6: Increase in Usage of Full-Text Electronic Journals in Comparison with Growth in Number of Licensed Databases

| | | |
|--|--|-----------------------|
| # of Licensed Databases in 2002: 239 | # of Licensed Databases in 2003: 418 | Growth Rate: +75% |
| # of Full Text Downloads in 2002: 2,300,000 | # of Full Text Downloads in 2003: 6,020,238 | Usage Increase: +270% |

Of course, as seen in figure 7, not all ANKOS Members have access to all databases. This is in part because they cannot afford to subscribe to all of them. Even if they could afford more of them, however, not all institutions need access to all databases. The wide disparity among Turkish universities in regard to research activity that results in the publication of scientific articles is documented in figure 8. Fortunately, this is changing as the number, size and technical facilities of universities in the country grow and, as its Membership increases, ANKOS is able to license an expanding array of electronic resources.

Figure 7: Distribution of Members Participating in ANKOS Contracts for 2003 & 2004

| # of Database Contracts | # Members – 2003 | # Members - 2004 |
|-------------------------|------------------|------------------|
| < 5 | 41 | 37 |
| 5-10 | 22 | 19 |
| 11-15 | 13 | 12 |
| > 15 | 2 | 10 |

Average number of Members participating in a database contract in 2003: 5.4

Average number of Members participating in a database contract in 2004: 7.2

Figure 8: Number of Publications of Turkish Universities & Research Institutions in 2002

| # of Institutions | # of Articles Published |
|-------------------|-------------------------|
| 21 | < 20 |
| 15 | 20-50 |
| 12 | 51-100 |
| 16 | 101-200 |
| 9 | 210-500 |
| 3 | > 500 |

Another aspect of the consortium's success is the high rate of cross access to the previously non-subscribed journals, as can be seen for the Institute of Physics journals in Figure 9. The average cross access ratio is 82%. Even libraries with large print collections, like Bilkent University and Middle East Technical University, have a cross access rate of about 50%.

Figure 9: IOP 2003 Usage Statistics by Title (Cross Access)

| Member | Total Print Subscriptions | Total E-Access to Non-Subscribed Journals | Percentage of Cross Access |
|----------------------------------|---------------------------|---|----------------------------|
| Ankara University | 2 | 1,679 | 99% |
| Atatürk University | 1 | 2,045 | 99% |
| Bilkent University | 12 | 874 | 47% |
| Bogaziçi University | 6 | 559 | 59% |
| Çukurova University | 3 | 1,512 | 96% |
| Dokuz Eylül University | 3 | 728 | 60% |
| Ege University | 1 | 1,057 | 60% |
| Fırat University | | 1,563 | 100% |
| Gazi University | 3 | 2,506 | 89% |
| Gaziantep University | 2 | 1,551 | 91% |
| Gebze High Technology Institute | | 4,009 | 100% |
| Hacettepe University | 2 | 943 | 76% |
| Inönü University | | 1,323 | 100% |
| Istanbul Technical University | 4 | 1,200 | 72% |
| Izmir High Technology Institute | | 941 | 100% |
| Kardeniz Technical University | | 1,015 | 100% |
| Kocaeli University | 2 | 699 | 89% |
| Koc University | | 489 | 100% |
| Middle East Technical University | 7 | 3,739 | 59% |
| Mugla University | | 478 | 100% |
| Sabancı University | 3 | 277 | 91% |
| TAEK | 1 | 1,915 | 99% |
| | 52 | 31,102 | Average: 82% |

Total Full-text Downloads

37,888

Currently, there are 76 universities in Turkey, including 54 state institutions and 22 private ones. Remarkably, 47 of them have been founded since 1992 but often with little funding and inadequate technical infrastructure. The private universities are concentrated in big cities like İstanbul, Ankara and İzmir, in contrast to the newly established state universities being located for the most part in small cities in Anatolia.

In the 2001-2002 academic year, the total number of students, including those enrolled in distance education courses, was about 1.5 million. Presently, there are 762,000 enrolled in four-year programs and 263,000 in two-year programs. The number of Master's and PhD students is about 105,000. The enrolment in private universities accounts for only 4.6% of all

students. The number of academic staff is about 25,000, in addition to which there are 44,000 teaching and research assistants.

The distribution by discipline of undergraduates, graduate students and faculty is given in figure 10. The high percentage of graduate students and faculty in STM fields indicates the potential use for databases in these fields. For this reason, from year to year ANKOS has added more electronic journals from major publishers in STM fields. User response, evidenced by the 65% increase in the number of downloads of full-text articles, is gratifying to our Members.

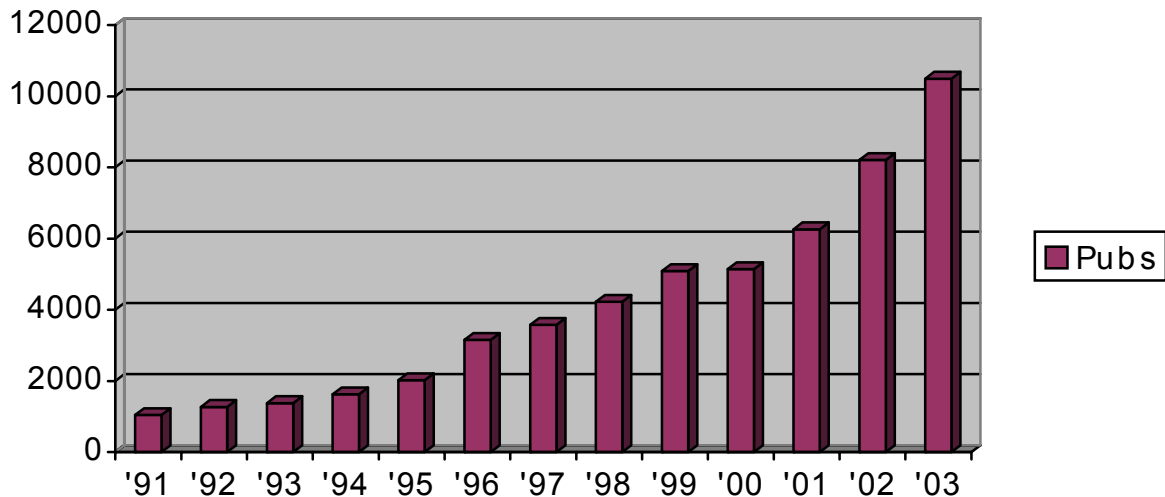
Figure 10: Distribution of Turkish University Students and Faculty by Discipline

| Discipline | %-Undergraduates | % - Graduates | % - Faculty |
|----------------------|------------------|---------------|-------------|
| Language/Literature | 4.56 | 2.70 | 2.71 |
| Mathematics/Science | 10.77 | 8.16 | 10.20 |
| Health Sciences | 8.67 | 6.03 | 31.69 |
| Social Sciences* | 56.51 | 47.19 | 24.82 |
| Engineering | 16.37 | 21.76 | 15.54 |
| Agriculture/Forestry | 3.01 | 4.48 | 6.14 |
| Arts | 0.11 | 1.69 | 2.05 |

* includes Sociology, Philosophy, Psychology, Law, Management, Economics and Administrative Sciences

In order to increase the number of scientific publications, the Turkish Government has invested a lot in higher education during the last ten years. According to ISI Science Citation Index, the 8,372 publications by Turkish scholars in 2002 placed Turkey in 22nd place among other nations, compared with 1982, when Turkey ranked 40th. The rate of increase from 2001 to 2002 alone was 31%, which was the second highest rate of growth. Even more interesting is the enormous increase in the number of publications produced by universities outside of the big cities. The total number of publications in these universities was about 3,840 in 2002, an increase of 62% compared with 2001. The computer infrastructure of the universities (number of PCs and PC labs, their availability for use during non-work hours, Internet band width capacity, and so on) influences the usage of databases in each institution. Despite infrastructural limitations, however, electronic journals are being used at a rapidly increasing rate in the newly established state universities outside of the big cities, resulting in the obvious corollary of the substantial increase in scientific publishing activities in these universities. The chart in figure 11 illustrates the growth overall in scientific publication in Turkey in recent years.

Figure 11: Growth of Scientific Publications in Turkey



Current Issues

Major issues with which we presently are grappling are deciding on the form of governance we should have. Until now we have operated on the premise that our parent institutions are legal entities chartered by the government with requisite authority to enter into contracts and to allocate funds for library purchases. However, to obtain any amount of central funding, which would enable us to negotiate agreements covering all Members and incur a single invoice for each database we license, it is thought that ANKOS needs legal recognition as an entity in its own right. In this regard, the model of HEAL-LINK⁸ appears to be a useful one for the Turkish consortium. However, the likelihood that central funds simply would be taken off the top of the State libraries' budgets is unappealing to the concerned library directors as well as to their university rectors. Other concerns relate to perpetual archiving and whether to maintain a national archival repository of electronic resources we purchase or rely on the producer or a third-party vendor to maintain such an archive and provide access in future at some unspecified cost. Lastly, we are dissatisfied with the usage statistics most of our suppliers have provided so far. Therefore, we are aggressively seeking standardized usage statistics in accordance with ICOLC guidelines from all of our suppliers.

Future Aims and Expectations

As for the future of ANKOS, our first aim is to have all university libraries participating in and benefiting from our consortium. In terms of expanding ANKOS, so that over time it might be a truly national consortium, we will first target other major research libraries. In this regard, we are particularly interested in trying to get two "national" libraries to join with us, namely the National Library and the Grand National Assembly – or, Parliament – Library. In the past year, a group of 20 K-12 libraries contacted us and sought our help in enabling them to make consortial purchases of a few databases. For now, some ANKOS Steering Committee members have been advising them with regard to their own initiatives. However, we think it should be possible to have a K-12 component of ANKOS. Also with implementation of the EU PULMAN-XT Project in Turkey, we are contemplating the possibility of having a public libraries component within ANKOS as well. As mentioned earlier, another future aim is to have a common integrated library automation system that will support a union catalog of all ANKOS Members' holdings, facilitate interlibrary loans to users in all Member libraries, and enable efficient electronic resource management across the consortium.

It is fair to say that our experience in developing ANKOS is similar in many ways to that of other consortia. Yet it is somewhat unique. Although we have no specific legal instrument setting out the governance of ANKOS and no central funding, our consortium is functioning

dynamically and has a lot of vitality. We have made remarkable progress in just three years and, in fact, have licensed more databases than many other – and richer – consortia have done. We still have a lot to sort out among ourselves and much to achieve; but ANKOS has proven to be a viable cooperative venture and appears to be fully sustainable, in spite of the economic crisis which has beset the country for quite some time now. It is still evolving, of course, but those of us committed to working for its betterment, believe that it is going from strength to strength and that it has a very bright future indeed!

¹ Nfila, R.B. and Darko-Ampem, K. (2002) "Developments in academic library consortia from the 1960s through to 2000: a review of the literature", *Library Management*, Vol. 23, No. 4/5, pp. 203-212.

² Tonta, Y. (2001) "Collection development of electronic information resources in Turkish university libraries", *Library Collections, Acquisitions, & Technical Services*, Vol. 25, pp. 291-298.

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⁴ Giordano, T. (2000). "Digital resource sharing and library consortia in Italy", *Information Technology and Libraries*, Vol. 19, No. 2, pp. 84-89.

⁵ Neubauer, W. and Piguet, A. (2001?) "The long road to becoming a 'Consortium of Swiss University Libraries' ", *Liber Quarterly*, Vol. 11, pp. 87-92.

⁶ Anglada, L.M. and Comellas, N. (2002) "What's fair? Pricing models in the electronic era", *Library Management*, Vol. 23, No. 4/5, pp. 227-233.

⁷ Sanville, T. (2001) "A Method out of Madness: OhioLINK's Collaborative Response to the Serial Crises", *Serials*, Vol. 14, No. 2, pp. 163-177.

⁸ Xenidou-Dervos, C. (2003) "Moving from print to electronic: a survival guide for Greek academic libraries", *Serials*, Vol. 16, No. 1, pp. 145-152.