MEMORANDUM

TO: Members of the Computer Advisory Committee
                   Ara Arabyan
                   Ruben Karapetian
                   Igor Mktumian
                   Tigran Nazarian
                   Virgil Strohmeyer

FROM: Allen G. Greenwood, Chair

DATE: June 28, 1993

SUBJECT: Minutes of the 6/22/93 meeting of the AUA Computer Advisory Committee

The first meeting of the AUA Computer Advisory Committee (CAC) was held Tuesday, June 22, 1993, from 2 until 3 p.m. All members were in attendance except Tigran Nazarian; in addition, Dean Der-Kiureghian and Provost Gibson were in attendance.

Igor distributed copies of his inventory and location of all hardware and software at the AUA .

Since this meeting was the only time the committee could obtain Armen's direct input before his return to the US, the main intent of the meeting was to obtain as much information and perspective from Armen as possible. Armen indicated his main needs from this committee are: obtain an inventory of computers and software and a process for keeping that information updated, an assessment of how the AUA can best use the equipment they have, and recommend how they could best use additional funds for computing (assuming two levels of additional investment: $50,000 and $100,000).

The recent acquisition of 40+ computers (already installed) and future LAN was funded by a USAID grant. Another proposal was submitted to USAID for additional computing facilities, mostly workstations and an IE manufacturing lab.

A proposal was submitted to AT&T for a grant to provide the necessary hardware and software for the AUA to become the center for all educational computing in Armenia.

Acquisition of the network hardware and software is underway -- an update on the status will be available from Vartkes Barsam when he arrives this week. Igor developed and submitted the equipment list to Vartkes. It was suggested that the AUA consider hiring a consultant to review the network plan, help with installation, and properly train AUA personnel in the operation and maintenance of the LAN.

A plan is being considered to move the computer lab and maintenance area that is in the front of the building to an area adjacent to the new lab. This will better centralize computing activities and free up the existing lab for classroom space (similar to room 23 below).

Many of the items that were mentioned or discussed were related to e-mail; these include:

- Haigazian University is connected to an Internet e-mail fax service that costs $0.17 per page.

- AUA-Oakland now has an e-mail connection. This should greatly reduce the fax costs between Armenia and California. The e-mail address must be distributed and a process for confirmation needs to be established.

- The current e-mail system available at the AUA, ADONIS, needs investigating. George indicated the AUA is paying $96 per month for this service. The issue was raised, are we getting our money's worth, considering the quality of the service?

- Because of costs, there is the possibility that the university will begin charging users for e-mail time.

- There still seems to many problems with the current e-mail system. The system is inconsistent -- sometimes it works well, but most of the time it does not. It generally takes an exorbitant amount of one's time to get a message sent or to receive one. It should be determined what problems are due to ADONIS and what problems are due to the phone line. Problems are: lost messages, excessive delays in sending and receiving messages, inability to send messages due to "unrecognized host name," difficulty in getting connected (no response from host) or staying connected (frequent interruptions).

• The AUA should consider having the Ministry of Higher Education obtain a leased line (better quality) from the university to the local switch center.

• One alternative to the current e-mail system is to have a single or centralized e-mail account for the entire university. This would require all transmissions go through a central operator for the sake of privacy and to protect against the inadvertent deletion of messages. The system would most likely operate similar to the present fax service -- users would bring their messages on disk to have them sent and incoming messages would be printed and distributed by the operator. One problem with this idea is that it may preclude users with their own portable computer from sending messages directly from their machines. The ramifications of using a single SOVAM account versus a single ADONIS account need to be addressed. All of these issues should be explored further with the possibility of trying a single account system on an experimental basis.

The university continues to be in desperate need of computing supplies, most notably diskettes.

Each member of the committee was requested to identify any computer-related issues that they or their colleagues would like this committee to address.

The plan for the next meeting -- June 29 from 3 p.m. until 4 p.m. in room 24 -- is to have George present his responsibilities, problems, and ideas related to computing at the AUA, and to get his views on how this committee can best serve the needs of the university. In addition, the committee will formulate a list of tasks and issues to be addressed.

cc: Armen Der-Kiureghian
        George Gibson

MEMORANDUM

TO: Members of the Computer Advisory Committee
                      Ara Arabyan
                      Ruben Karapetian
                      Igor Mktumian
                      Tigran Nazarian
                      Virgil Strohmeyer

FROM: Allen G. Greenwood, Chair

DATE: July 5, 1993

SUBJECT: Minutes of the 6/29/93 meeting of the AUA Computer Advisory Committee

The second meeting of the AUA Computer Advisory Committee (CAC) was held Tuesday, June 29, 1993, from 3 until 4:30 p.m. All members were in attendance except Ara Arabyan; in addition, Provost Gibson was in attendance.

The minutes of the June 22, 1993 meeting were approved.

George presented his responsibilities, problems, and ideas related to computing at the AUA, and provided his views on how this committee can best serve the needs of the university. His main responsibilities are to find space for computing activities and to assign equipment. His main charge for the committee is to define the computing needs and requirements of the university as soon as possible in order to facilitate the next major purchase which is expected in the near future. He suggested for planning purposes the committee should assume the following: the LAN is installed, each college, Business and Engineering, will have a maximum of 8 faculty per quarter, ESL will have 4 foreign and 8 local faculty, and projected student enrollment will 80 business and 40 engineering students.

Tigran distributed copies of his inventory of all software on the Macintoshes at the AUA. The only copy of most of the Mac software (approximately 100MB) is on the hard disks of the Macs in the computer lab. The AUA did not purchase most of the software; therefore, it is not licensed and we do not have the installation disks or manuals. In fact, most of the software is not on disks at all, due to the shortage of diskettes. Since 300 diskettes just arrived on the UAF flight, Tigran will begin backing up all of the software on the Macs to diskettes.

The only diskette copy of any software should be the one in the Computing Department's library. No other copies are necessary. Preferably the Computing Department will have a copy of the installation diskettes in their libray.

The AUA has recieved a large box of software. It should be inventoried and decided whether it should be installed, kept in the Computing Department's library, or discarded (if out dated).

The committee should compile a rank-ordered list of software needed for the LAN.

According to Igor, ADONIS now has an e-mail fax service. It costs $0.17 per page. This compares to approxmately $0.12 per page for regular e-mail ($0.06 per KB). We will try the fax service, and if successful, start using it.

We discussed the idea of the AUA's primary computing environment being Windows. The computer training courses taught to incoming students should be changed as follows: MS-DOS to Windows 3.1 (or NT, when it comes out), WordPerfect 5.1 to MS Word for Windows 2.0, Lotus 123 to Excel for Windows, and dBase III+ to either FileMaker Pro or Paradox for Windows.

Ruben mentioned most of the first year students would like to learn and use Windows-related software. He felt if the student had some materials available, they could learn it themselves. Allen will check to see if he has any guides or similar materials.

The next meeting will be Tuesday July 6 from 3 p.m. until 4 p.m. in room 24. We will formulate a list of tasks and issues to be addressed and begin the process of assessing the computing needs and requirements of the AUA.

cc: Armen Der-Kiureghian
        George Gibson

MEMORANDUM

TO: Members of the Computer Advisory Committee
                    Ara Arabyan
                    Ruben Karapetian
                    David Livingston
                    Igor Mktumian
                    Tigran Nazarian
                    Virgil Strohmeyer

FROM: Allen G. Greenwood, Chair

DATE: July 9, 1993

SUBJECT: Minutes of the 7/6/93 meeting of the AUA Computer Advisory Committee

The third meeting of the AUA Computer Advisory Committee (CAC) was held Tuesday, July 6, 1993, from 3 until 4:30 p.m. All members were in attendance.

The minutes of the June 29, 1993 meeting were approved.

It was requested at the last meeting that some information be provided to the students on the basics of Windows. Allen provided a book on getting started with Windows. Virgil will incorporate part of the material into the ESL program; Tigran will prepare part of the material for display in the computer labs; and, the book will be placed in the library.

David Livingston will be invited to join the committee beginning with the next meeting. David is a visiting research associate with the CBRD through the I.E.S.C. (International Executive Service Corps) program. He is here as a consultant to provide advise on computing issues. All members felt his considerable experience with and knowledge of information systems will be a valuable addition to the committee.

The committee has decided, as discussed in the last meeting, to recommend that some notebook computers be purchased for use by visiting faculty. The advantages are: they can easily be shared among faculty; they can be taken home if needed; they are less dependent on electricity; and, they will not shut down with the frequent short-term power interruptions. The disadvantages are they would not be as easy to repair here (although they would be easy to transport to the US or Europe for repair) and they would be easier to steal. The committee felt the advantages clearly outweighed the disadvantages.

The question was raised does the AUA want to obtain a site license for Aragast's Armenian/English dictionary?

All computer related materials and issues should go through the Computer Department, that is Igor and not Arthur. This includes new software, diskettes, installation diskettes, etc. Igor has just hired two technicians to help with the operation of the Computing Department.

The issue of UPSs was raised. Plans for network include a minimum of one UPS for each server. Any workstation would also require a UPS. Virgil indicated Michael Keshishian is using a car battery as a UPS for his Macintosh -- so far, it seems to be working well. There also are UPSs available locally; they can also be constructed to our specifications. Igor will investigate the cost and capabilities. If the local UPSs seem of interest, this committee urges the university to purchase one or two on a trial basis. We should consider purchasing a single PC UPS and one that will support three to four PCs (for use in the labs or research centers).

The status of the LAN is still uncertain. According to Igor, Vartkes Barsam is obtaining three bids for the material. In terms of timing, the only estimate of when it should be completed is "soon." It seems to be prudent to delay any purchases until we have had a chance to discuss the LAN issue with David Livingston.

Computerland in Yerevan is tied to the Glendale, CA store. The AUA should investigate using them as source of relatively quick supplies. Even if the university chooses not to use them, faculty would be interested in knowing what services they can provide in terms of obtaining replacement parts or supplies.

There was a discussion of what to do with the VAX and microVAX that are in the lab. At this time there does not appear to be any need for the VAX; the microVAX might be used as UNIX platform, but, in terms of the current academic programs, there may be little need for such a machine.

Each member of the committee is to discuss the needs of their college/department so that the committee can formulate a plan on how new computer hardware and software funds should be spent. It was decided the needs should be for the next academic year, starting in March 1994.

The next meeting will be Tuesday July 13 from **2 p.m.** until 3 p.m. in room 24. Please note that we will meet one hour earlier than usual. Also note I have added David Livingston as a member of our committee.

cc: Armen Der-Kiureghian
        George Gibson

MEMORANDUM

TO: Members of the Computer Advisory Committee
                      Ara Arabyan
                      Ruben Karapetian
                      David Livingston
                      Igor Mktumian
                      Tigran Nazarian
                      Virgil Strohmeyer

FROM: Allen G. Greenwood, Chair

DATE: July 15, 1993

SUBJECT: Minutes of the 7/13/93 meeting of the AUA Computer Advisory Committee

The fourth meeting of the AUA Computer Advisory Committee (CAC) was held Tuesday, July 13, 1993, from 2 until 4:30 p.m. All members were in attendance except Ara Arabyan. David Livingston was introduced and welcomed as a member of the committee.

The minutes of the July 6, 1993 meeting were approved.

Igor presented the inventory of the donated software that was received on the last UAF flight. Although there were nearly 60 different pieces of software on over 200 diskettes (including multiple copies), most of the software is very outdated and of little value to the university, other than for reusing the diskettes. The committee feels donated material should be better screened in the U.S. to avoid shipping unneeded items to Armenia. A similar issue, regarding library books, was raised during a general faculty meeting held earlier this year. It is the belief of the committee that if the AUA is trying to build an image as the leading institution in the region, it should only propagate the latest technology. This philosophy should be explained to potential donors.

Allen indicated that Stepan Karamardian had phoned Michael Kouchakdjian on Monday to put together a "wish list" of equipment for the College of Business and the CBRD. Apparently there are some unused funds, approximately $55,000, that if not spent would be lost. Stepan needed the information faxed back the same day. Allen felt uncomfortable making any recommendations because this was one of the main charges of this committee and currently the primary focus of its work. He also felt such a decision should not be done hastily and certainly should involve the entire university. David Livingston said he had also been asked the same thing by Michael and offered similar advice. Allen checked with George Gibson and he knew nothing of this matter. Also, no one had received any information from Armen Der-Kiureghian, to whom President Agbabian has given overall responsibility for computers. Therefore, since it seemed unlikely the university would be engaging in such a decision without input from this committee, the item was not considered further -- the most effective way to spend additional funds for computing will be the subject of a report to be issued by the committee in a few weeks.

Much of the meeting focused on a discussion of the computing needs of the AUA, in preparation for developing recommendations on how additional funds for computing should be spent. While the following ideas are not yet finalized, they will be a part of the recommended list of items to purchase with additional funds.

    The inventory of spares and supplies must be increased. The university should have spare monitors (less than $200 for a B&W monitor, $350 for color). Not only could a computer continue to be used when the monitor fails, visiting faculty with their own notebooks or laptops could greatly enhance their computing environment with a monitor. There should also be spare keyboards (approx. $30), hard disks, and SIMMs (approx. $35/MB). Ribbons (approx. $2.50 each) and print cartridges should be more readily available (it was recommended that refurbished print cartridges should not be used here; despite the lower cost, about 1/3 do not work).

    All 286's should be upgraded to 486s because they either will not run current software or run it poorly. David Livingston indicated a 486 motherboard with a 486DLC 33 MHz chip and co-processor only costs about $360.

    The AUA should move towards standardization in hardware and software -- more on the software issue later.

    David suggested the AUA consider moving away from machines with floppy drives or at least have locked drives, once the network is in place, to enhancee security and reduce the exposure to viruses.

    Aragast Corp. will start producing UPSs in about a week. A 600VA unit that will run three computers for up to four hours (running on three car batteries) will cost between $200 - 300. This sounds like a very good deal. Igor and David will visit Aragast and

evaluate the equipment further. David also suggested this type not be used on servers since it will not notify the network software that it is going down, so that it can shutdown gracefully.

According to Ruben there is not a problem with students getting access to computers in the labs. There seems to be sufficient capacity at the moment, except for some times when multiple assignments are due at nearly the same time. There is concern this may not be the case in the fall when there will be significantly more students enrolled at the university. Virgil indicated that this summer ESL is not requiring writing to be word processed; however this will not be the case in the fall. Allen indicated he felt there seemed to be less assignments requiring the computer in the College of Business this term.

With regard to any acquisition of equipment the university should study all products carefully. A lowest cost strategy should be avoided, especially in our isolated environment. The products should be proven reliable and of good quality. As David pointed out, that does not mean buying the most expensive. Also any purchase should include an appropriate number of spare parts.

The issue of the legality of software being used at the AUA was raised by David. The committee recognizes the importance of this issue and has had it as an agenda item to discuss. This issue is obviously related to how additional funds will be used. Issues related to software legality are as follows:

The university must establish a policy on using illegal software in teaching, research, and administration. It should also have a policy on having illegal software installed on its computers. It only seems prudent to devise a plan to move towards a completely legal computing environment. Although the reasons for this should be obvious, for the record, they need to be articulated. If we are to be a model for the region, we cannot freely copy software, even for use within the university -- it is against the law to place single-user license software on multiple machines. We teach ethics in the classroom, but we must demonstrate that we practice what we preach. The AUA is a U.S. corporation an affiliate of the University of California, and recevng funds from U.S. government organizations, such as USAID; therefore, our violations also implicate these organizations.

We feel that attractively-priced site licenses could be negotiated in the U.S. We recognize this involves a considerable amount of work by the U.S.-based administration, but the benefits will be great.

Virgil suggested investigating a process similar to the one offered by Apple. The AUA could become a regional center for software sales.

The AUA needs to establish software standards -- software that will be supported for teaching, research and administration. We have moved from a DOS environment with WordPerfect, Lotus 123, and dBASE III+ as the primary applications to a Windows environment with Word, Excel, and possibly FileMaker Pro as the primary applications. It seems that Windows will be the main computing environment, but one strategy would be to adopt the standard application based on what company will give us the best licensing agreement for both networked and non-networked software and upgrades.

We should consider moving to DOS 6.0. This could be the first item that we "legalize." David mentioned he bought it for $33 each in a three-pack. Further discounts may be possible and some vendors are including it bundledwith other software; for example, WordPerfect 5.2 and DOS 6.0. The main advantage of DOS 6.0 is it includes a memory manager/optimizer and compression software to greatly increase the effective size of the hard disk. DOS 6.0 is compatible with Windows 3.1.

David and the committee commended Igor for the admirable work he has done on the network plan, but we feel it is essential for the university to hire a consultant to design the network and provide instruction on its operation and maintenance.

As a result, we strongly recommend the university delay its plan to purchase any LAN hardware and software until the recommendations of such a consultant are obtained.

We recognize this will be expensive, but we also feel it is imperative to the successful installation, operation, and maintenance of the network. The university should strive to find a well qualified, highly recommended network specialist.

Members of this committee could do the preliminary work that would be needed in order to get ready for the consultant -- identifying the needs of each area, how to run cable, etc. -- so that the consultant's time in Yerevan could be used in the most effective manner.

While the entire plan for the network should be done now, it should be made operational in phases. The first phase should involve two segments with a bridge. For example, the computer lab and department and another area with dissimilar functions such as a college and research center.

In starting to prepare for planning the network, each department should assess the following: how would their workgroup use a network; what type of software would be used (would it be on the network or locally on individual machines); what type of work would be done on the network; what type of information would have to be shared by people within and outside of the workgroup.

The question of what will be that status of the Mac SE when Professor Kaljian leaves. Will it be placed in the lab? It seems it would go back into the lab, as would all of the computers residing in faculty offices -- they were allocated as a "loan" from the Computer Department.

The university should allocate money for the immediate purchase of "how to" books and videos for the software currently being used at the AUA. Videos will become an important means of "self-instruction" once the language lab is moved to the AUA.

David is very eager to help this committee and the university both now and in the future. He volunteered to provide advice and help even after he leaves in August. We are confident the university will continue to take advantage of David's expertise.

The next meeting will be Tuesday July 20 from **3 p.m.** until 4:30 p.m. in room 24. Please note that we have returned to our usual meeting time. If you have not already done so, please provide me with the hardware and software needs of your department by Monday afternoon, at the latest. Also, provide a description of your workgroup would use a network; what type of software would be used (would it be on the network or locally on individual machines); what type of work would be done on the network; what type of information would have to be shared by people within and outside of the workgroup.

cc: Armen Der-Kiureghian
         George Gibson

MEMORANDUM

TO: Members of the Computer Advisory Committee
                    Ara Arabyan
                    Ruben Karapetian
                    David Livingston
                    Igor Mktumian
                    Tigran Nazarian
                    Virgil Strohmeyer

FROM: Allen G. Greenwood, Chair

DATE: July 26, 1993

SUBJECT: Minutes of the 7/20/93 meeting of the AUA Computer Advisory Committee

The fifth meeting of the AUA Computer Advisory Committee (CAC) was held Tuesday, July 13, 1993, from 3 until 5:00 p.m. All members were in attendance.

The minutes of the July 13, 1993 meeting were approved.

The last meeting of the entire committee will be Tuesday July 27, as Ara and Virgil will be leaving. Allen and David leave August 12. Armen will be arriving July 30; therefore, it may be necessary for the committee to meet with Armen and George during Armen's visit.

Ara indicated engineering would need four computers for the college and four for the research center. David raised the issue of a digitizer or plotter but Ara felt they were not necessary.

Since most colleges/departments indicated a desire for a scanner, the committee began discussing its desired capabilities. Tigran noted that Vartkas Barsam told him the university already bought an HP black and white scanner (not sure what model). One issue that needs to be decided is where to place the scanner -- copy center or computer department?

David felt even if the university purchases laptops for faculty, there is a need for an external monitor when the laptop is used as a desktop machine. He also indicated a top-end laptop would cost about $3800 while a 486/80MB with mouse would cost approximately $2000.

David suggested only buying Microsoft mice because of reliability.

Six more computers would be needed to fill the existing labs stations.

Engineering is using AutoCad which requires 40 MB of hard disk space. The issue was raised because we may need to have larger hard disks on machines running AutoCad. Since we only have one copy (it is expensive -- approximately $3700 or $2000 educational version), it is suggested only one machine be set up for AutoCad in the lab. David suggested considering the use of GenericCad which sells for only $395.

Igor was concerned that faculty specify certain software and the AUA must get it. The committee feels that the university and each college/department should establish standard software for use in their courses. If a list of AUA's software is provided to faculty when they agree to teach, they can adapt their course to what is available, negotiate with the dean to purchase the required software, or make their own arrangements to get the software here (bring their copy, make an arrangement with the company, etc.) It may be the case that faculty do not know what is available; therefore, they specify their preference, but would be satisfied with the comparable product that the AUA already has. Also, in most cases it doesn't matter what the brand name is, the products are very similar, e.g. Lotus 123 versus Excel versus Quattro.

With regard to the issue above, it was reiterated that the university must standardize its software. One strategy for deciding the standard may be price -- who among Microsoft, Borland, and Lotus will give us the best deal on a site license for a suite of word processing, spreadsheet, and database software.

David indicated the university should be careful using any software that has DES encryption built in -- it cannot be exported!

There was a lengthy discussion on CD/ROM and how it should be used at the AUA, both near term and long term. It is obvious this is the media of the future, but in many ways it has already arrived -- computer software, documentation, magazines are now routinely

available on CD/ROM. The AUA should begin using this technology for basic reference (encyclopedia), data, etc. There should be several simple players available and the AUA should start to build a collection of disks; more exotic uses should be considered later. Should they be available in the library (if so maybe they can be acquired through USIA) or in the computer department or both?

The AUA is in dire need of current computer magazines; many of the magazines, especially weeklies, are free. One alternative is to get them on CD/ROM; another alternative is to have them shipped monthly on the UAF flight. They would either be consolidated in the Oakland office or AGBU in New Jersey.

Aragast expects its UPSs to be available next week. As soon as they are ready, Igor and David will visit Aragast and assess their product.

Since we are considering four-machine UPSs, there would be a need to cut through walls between offices so the UPS could be shared. This may be a problem with the architect. The same problem would result when installing the LAN. Igor indicated there are tubes under the floor for wiring which may be another alternative. David will discuss these issues with the university architect.

In determining what equipment should be bought with additional funding, the priority will be given to the computer department and for instruction purposes. Administration and research centers will have low priority. In addition, we are not considering audio/visual equipment or copiers -- only computer-related equipment.

One goal of the committee in its allocation will be to have at least one computer for every two faculty. Based on current estimates, business and engineering both plan to have at most eight faculty here at a time. Therefore, there should be at least four computers for each. Since there is a high turnover of AUA faculty from quarter to quarter, the needs of the faculty are dynamic -- some faculty are heavy computer users, others do not use them at all. To ensure the best use of resources, one possibility is to have some or all of them in a pool that can be allocated by the Provost and computer department based on the needs of the faculty that particular quarter. The deans should solicit faculty needs as soon as they have agreed to teach and forward that information immediately to the Provost.

The next meeting will be Tuesday July 27 from 3 p.m. until 5:00 p.m. in room 24. Since this will be the last meeting for all members, we have a lot to resolve. Our priority will be the allocation of additional funds. In order to prepare our final report, I will try to have the following items ready for the meeting or by Tuesday morning so that you can hopefully review it before the meeting: a list of recommendations and decisions that the committee has made and a list of issues brought up during our meetings but not yet resolved. Please give some thought to the continuance of the committee -- its need, who should serve, who should chair it, what should its charge be, etc.

cc: Armen Der-Kiureghian
        George Gibson