

The Pacific Neighborhood Consortium

First (Organizational) Meeting

Executive Summary

Usually, an executive summary consists of a well-organized reduction of a lengthy report. Unfortunately, neither of these forms -- summary or full report -- allows much communication of the emotional tone of a meeting. What was notable about the first meeting of the Pacific Neighborhood Consortium was the enthusiasm for forming a new kind of organization with potential far beyond that of a single national effort. The PNC began as an exercise among a group of faculty and staff located at the University of California, Berkeley and San Francisco, as a way in which a truly multinational organization, with extraordinary potential for mutual benefit, could be created. The PNC is now a multi-national organization, governed by an international board of directors, and oriented toward benefiting members in all participating countries. The enthusiasm remains high and the membership is increasing. If the pattern of development continues as in the present, the PNC will be a notable success among institutions of higher education, as one of the first genuinely international organizations composed of institutions rather than individuals.

The Pacific Neighborhood Consortium came into formal existence on the morning of January 14, 1992, when the first formal session was convened. Representatives from thirty institutions located in sixteen countries were present for the start of the organizational meeting.

The organizational meeting began the morning of January 14, with welcoming remarks by Curtis Hardyck for the Consortium, by Lawrence Landweber on behalf of the Internet Society and by Joan Lippincott for the Coalition for Networked Information. An inspiring keynote address was given by Dr. Charas Suwanwela, President of Chulalongkorn University of Thailand, and has been included in full as part of this report.

Following the keynote address, a general session, prior to forming into work groups, addressed the "tasks" that an organization such as the PNC would have to address to be a viable, functional entity.

Three task force groups were formed:

- Library and Networked Information Resources, with Clifford Lynch as primary chair, with specialized topics covered by K.H. Poon, Min-Min Chang and Richard Lucier.
- Distance Learning, Teleconferencing, and relations to Primary and Secondary Education, chaired by Art St. George, with specialized topics covered by David Lassner and John Dockerill.
- Connectivity and Costs, co-chaired by Lawrence Landweber and David Wasley.

The first day luncheon and the organizational banquet both had invited addresses. At the luncheon, Professor Hugh Bradlow of the University of Wollongong, Australia, demonstrated the "visit" software, which allows real time video and audio over a 56kb line using a Machintosh or a PC with Windows. At the inaugural banquet, Dr. Clifford Lynch of the Division of Library Automation, University of California, reviewed the development of another organization devoted to electronic information exchange, the Coalition for Networked Information, and how its development may aid the PNC in becoming an effective organization.

Two of the three task forces, Distance Learning, Teleconferencing, and relations to Primary and Secondary Education and Connectivity and Costs, developed lists of tasks or problems that should be undertaken. The task force on Architectures, perhaps reflecting the increased level of development in this area, focused more on the current level of developments in standards and information exchange policies. Accordingly, the list of potential projects is drawn from the work of the first two task forces.

For distance learning, etc., the primary areas of interest were

1. Language Instruction
2. Pacific Rim Area Studies
3. Science Instruction

Project Areas suggested were:

Language Instruction. It would be a useful beginning to know of duo-national or multi-national language instruction projects. An inventory of such projects, including both those at the planning stage and efforts actually underway, would provide a useful baseline.

The preparation of a database of Pacific Rim faculty interests, to be provided on the PNC server, and on other regional servers.

The development of a student and faculty exchange coordination plan to improve current student-faculty exchange programs.

A directory of video and network services available at each participating institution.

The sharing of library catalogues and services, especially document delivery.

Many of the suggestions made by the Connectivity and Costs task force are similar in intent to the Distance Learning-Teleconferencing. In this section, several of the comments are repeated from the task force report.

The creation of an on-line database of information or pointers to information to assist in creation of new connections. This database might include information provided by the APCCIRN, PACCOM, or providers of communications services.

A database of individuals or institutions involved in networking or communications services would be very helpful.

Documentation of Appropriate Use Policies (AUP) or other communications policy documents would be helpful. The relevant documents may not be obvious to the first time browser so some general introduction to the topic should be written and included in the on-line server.

A database of all universities and institutions of higher education, research, and development organizations in Pacific Rim countries should be created. Information should include generic contact address, telephone and FAX numbers, and email addresses. Individuals at the institutions could be listed as well, if known.

Information on multi-media databases such as formats and accessibility.

Advisory information regarding networks that charge for traffic or receipt of email, etc.

Engineering guidelines for network development, or a pointer to the APEPG, etc.

PNC could run a "compression / decompression server" for the benefit of places that have low speed links or networks that charge for traffic.

Details are provided in the following full report.

The Pacific Neighborhood Consortium

Report of the First (Organizational) Meeting

The Pacific Neighborhood Consortium came into formal existence on the morning of January 14, 1992, when the first formal session was convened. Representatives from thirty institutions located in sixteen countries were present for the start of the organizational meeting.

Background

The events leading to the Pacific Neighborhood Consortium began with two requests for information, both directed to Curtis Hardyck, then Vice Provost for Information Systems and Technology at the University of California, Berkeley. A visitor to Berkeley, Associate Director of Computing Alan Ho, from the Chinese University of Hong Kong, sought advice on both networking development and on the formal administrative organization of computing at Berkeley. In the course of discussing the requested information, Director Ho commented that he was pleased to be able to come to Berkeley in connection with another meeting, given the cost of Pacific travel and the limited opportunities to exchange information.

The second request came from a Berkeley faculty member, Professor Lewis Lancaster of Asiatic Languages, and a scholar of Buddhist teachings. Professor Lancaster had, after many years of traveling to Asia to study regional and country variations, persuaded a foundation to subsidize the transcription of the variations of the Canons of Buddha into an electronic database, to allow more systematic study. He requested help from Information Systems in setting up his database in a way that would make it accessible to other scholars of religion over the Internet. In a manner similar to Director Ho, Professor Lancaster commented on the fact that this database would make acquiring material for study much easier as compared to the difficulties of finding funds to travel to the location of the material.

These two requests, similar in purpose, very different in content led Vice Provost Hardyck to question whether there were ways that could lead to a useful and mutually beneficial information exchange system, even over the immense distances of the Pacific. To explore this, he asked several colleagues to meet with him on a regular basis to discuss the possibilities of forming an organization. This group of Berkeley and San Francisco faculty, over a year, developed the basis for the organization that came into being in January 1993.

The PNC Founding Group

It is appropriate recognition to identify the members of this group, given the time and effort they all devoted to developing a conceptual basis for this organization:

Michael Buckland, Professor of Library and Information Studies, Berkeley

Albert Fishlow, Dean of International and Area Studies and Professor of Economics, Berkeley

Dorothy Gregor, University Librarian, Berkeley

E. A. Hammel, Director of the Quantitative Anthropology Library and Professor of Anthropology, Berkeley

Lewis Lancaster, Professor of Asiatic Languages, Berkeley

Richard Lucier, University Librarian and Associate Vice Chancellor for Information Management, San Francisco

Barbara Morgan, Director, Advanced Technology Planning, Office of Information Systems and Technology, Berkeley

J. Merrill Shanks, Director, Center for Computer Assisted Survey Methods and Professor of Political Science, Berkeley

David Wasley, Director of Network Operations, Office of Information Systems and Technology, Berkeley

Guiding Principles

In the course of weekly discussions, the Berkeley committee developed the basic guidelines for a consortium of institutions of higher education to engage in a mutually beneficial information sharing enterprise. Guidelines included:

- Emphasis on use and application rather than technology. The view taken was that the Internet and related developments were proceeding rapidly and with excellent technical guidance. The network in fact, may be developing faster than the knowledge of how to use it, hence the focus on applications and use.
- The development of mutual interest and sharing policies. The view was taken that the larger the corpus of freely shared data bases among the consortium members, the more effective the functioning of the consortium and the easier the expansion of the number of shared data bases.
- A emphasis on provision of aid from those rich in both information and technology to

those less fortunate. Consortium membership was not dependent on the ability to contribute volumes of collections, databases, etc., but on the provision of those items unique to the contributor that were of interest to other members of the consortium.

- A differential fee schedule was devised, depending on the level of development of the country in which the institution was located. Institutions in developed countries will pay a fee of \$ 5000 US per year toward the expenses of the consortium; developing countries will pay a fee of \$ 2000 US.
- Consortium fees are to provide sufficient funding for an administrative secretariat. If memberships in the consortium increase to the level where funding is beyond the level necessary to support agreed on activities, fees should be reduced.
- All members are expected to contribute equally in providing personnel resources toward the development and execution of consortium tasks.

Initial Presentation

Although the ideas were sound and there was no lack of enthusiasm, the project was in danger of collapsing through a lack of the substantial funding needed to hold a multi-national conference. Early in the discussions, a decision was made to begin the presentation of the project at the university president level, rather than at the library or computing level. Rationale for this decision stemmed from a realization that the commitment required was substantial for many universities and that presidential approval would be needed. Initial investigations of sources willing to provide the \$ 150,000 plus needed to hold a conference were not encouraging.

The needed opportunity came through the efforts of Berkeley Chancellor Chang-Lin Tien, University of California President David Gardner and the Asia Foundation of San Francisco. Two years earlier, the Asia Foundation, at President Gardner's urging, had held a conference of Pacific Rim Public University Presidents, with the goal of achieving greater cooperation among institutions of higher education in the Pacific Rim. Another conference was scheduled for April of 1992 at Seoul, Korea, again supported by the Asia Foundation. Chancellor Tien offered his time on the conference agenda for the presentation of the Pacific Neighborhood Consortium Proposal.

The proposal presentation was done by Vice Provost Hardyck. A commentary by then University of Hawaii President Albert Simone, was overwhelmingly enthusiastic in support

of the proposal, stating that actions of this sort were long overdue and should be strongly supported. At the concluding session of the meeting, the assembled Presidents, Chancellors, and Rectors voted both approval of the project and agreed to provide support from their institutions. Berkeley Chancellor Tien, University of California President Gardner, and the Asia Foundation deserve heartfelt thanks for their contributions to bringing the PNC into being.

Immediately following the Korea meeting, Curtis Hardyck visited universities in Hong Kong, Singapore and Australia, presenting the ideas of the Pacific Neighborhood Consortium and the support it had received from the university presidents at the Korea meeting. Several suggestions made by the universities visited were incorporated into the list of proposed activities and goals and a initial international steering committee began formation.

The next presentation of the goals and purposes of the PNC was done at the first meeting of the Internet Society, held in Kobe, Japan in July of 1992. Through the kind offer of Kilnam Chon, acting chair of the Asian Pacific Coordinating Committee for Interregional Networking (APCCIRN), a joint meeting of APCCIRN and PNC was held with over 70 participants. The net effect of the Kobe presentation was to increase the prospective membership by another 10 to 15 members.

The combination of enthusiastic support offered by the university presidents and the strong level of interest revealed at the Kobe meetings indicated that an organizing meeting should take place as soon as possible.

After consultation with the Berkeley steering committee, Honolulu was selected as the first meeting site. Honolulu has several advantages, being the site most equidistant from the majority of prospective attendees, having strong local support available at the University of Hawaii, and a variety of meeting sites available. The dates of January 14-15 were chosen, to allow prospective consortium members who might be attending the Pacific Telecommunications Council, held January 17-22 of 1993.

It was also decided that an international steering committee should be selected to insure that national and regional interests were appropriately represented. The members of this committee, who had the difficult task of developing and organizing the agenda represent eight countries and almost as many institutions. They are listed below

PNC International Steering Committee

Hugh Bradlow, University of Wollongong,

AUSTRALIA

Min-Min Chang, Hong Kong

University of Science & Technology

HONG KONG

Kilnam Chon, Korean Advanced

Institute of Science & Technology,

KOREA

John Haak, University of Hawaii,

USA

Yoshio, Kawazoe, Tohoku University,

JAPAN

David Lassner, University of Hawaii,

USA

Prachak Poomvises, Chulalongkorn University,

THAILAND

K. H. Poon, City Polytechnic of Hong Kong,

HONG KONG

Bernard Sheehan, University of British

Columbia, CANADA

Hoe Tong Thio, National University

Singapore, SINGAPORE

Curtis Hardyck, University of

California, Berkeley, USA (Executive Director)

Attendance estimated for the Honolulu meeting increased when the members of APCCIRN voted to hold their meeting just prior to the PNC meeting and in the same hotel. This allowed many of the APCCIRN attendees to double as institutional representatives to the PNC.

Organizational Meeting

The organizational meeting began the morning of January 14, with welcoming remarks by Curtis Hardyck for the Consortium, by Lawrence Landweber on behalf of the Internet Society and by Joan Lippincott for the Coalition for Networked Information. An inspiring keynote address was given by Dr. Charas Suwanwela, President of Chulalongkorn University of Thailand, and has been included in full as part of this report.

Following the keynote address, a general session addressed the "tasks" that faced the PNC, in

which the kinds of issues and problems that an organization such as the PNC would have to address to be a viable, functional entity, prior to breaking up into working groups.

Originally, four working groups had been organized:

- Library and Networked Information Resources, with Clifford Lynch as primary chair, with specialized topics covered by K. H. Poon, Min-Min Change and Richard Lucier.
- Distance Learning, Teleconferencing, and Relations to Primary and Secondary Education, chaired by Art St. George, with specialized topics covered by David Lassner and John Dockerill.
- Connectivity and Costs, co-chaired by Lawrence Landweber and David Wasley
- Governmental Regulations, chaired by Bernard Sheehan (Merrill Shanks, who was to be co-chair, was unable to attend)

After choices were made for task group participation, it became evident that the participants were focused primarily on the first three groups. Accordingly, the Governmental Regulations group was canceled and task forces limited to three groups.

At the first day luncheon, the speaker was Professor Hugh Bradlow of the University of Wollongong, Australia. Professor Bradlow, in addition to being professor of Electrical Engineering and Computer Science, is Director of the Nortel Laboratory, funded by Northern Telecom. Professor Bradlow reviewed the development of the "Visit" software--a system that requires only a Macintosh, or PC with Windows and a small TV camera, plus a communications board, to provide real time audio and video over a 56kb telephone line. His talk was followed by a demonstration of the Visit system, connecting first from Honolulu to Berkeley, where high resolution color images from the ImageQuery system were shown, and then to the Hong Kong University of Science and Technology, where pictures of the Asian Art collection were sent, with some difficulty.

The task force groups resumed activity for the afternoon session.

At the organizational banquet, Clifford Lynch of the Division of Library Automation, University of California, office of the President (Substituting for Richard West, University of California and Chair of the Coalition for Networked Information, who was unable to attend) reviewed the history of the Coalition for Networked Information (CNI) and drew parallels as to how CNI may serve as a model for the PNC. CNI began as a joint project of three American associations concerned with information management: EDUCOM, an association of universities concerned with the development of computing; CAUSE, an association of

educational institution managers of administrative computing, and ARL, the Association of Research Libraries. The initial goals of CNI were to promote the development of networks among institutions of higher education, to explore new ways of disseminating information, and to develop models of cooperation in information management.

The initial expectations of the CNI project membership were that perhaps 30 or 40 universities, at most, would participate in a project that required a commitment of time and effort from senior information management personnel and a membership fee of \$ 5000 US. At the organizing meeting, representatives of over 100 American universities were in attendance and membership has increased steadily each year. The CNI has developed effective task force groups in the areas of scholarly publishing, architectures and standards for electronic communication and teaching and learning, among others. CNI has been an extremely successful cooperative venture. Dr. Lynch closed by congratulating the PNC attendees for their efforts to create a new level of international cooperation in information exchange and by wishing them great success in this venture.

The morning session was devoted to an assessment of the current status of the PNC, what was needed to insure that useful products are produced from the cooperative efforts of the members and that efforts are made to notify other institutions who may wish to join the PNC, about the activities of the consortium. Especially notable about the PNC program. Numerous suggestions and offers of assistance were made to provide assurance of the continuation of the PNC.

Task Force Reports

In the afternoon (and closing) session, the activities of the task groups were reviewed and discussed. The recommendations of the task forces, as reported by the chair and co-chairs, are given in the following section

Distance Learning, Teleconferencing, and relations to Primary and Secondary Education

Chair	Art St. George (New Mexico)
Co-chairs	David Lassner (Hawaii)
	John Dockerill (Hong Kong)

The first day of discussion was, not surprisingly focused on a review of the relevant topics for our task force to consider. Peter Lyman (University of Southern California), noted that he

felt that a very important item for this group was the consideration of the kinds of links between scholars that led to the creation of new collaborative relationships. Yoichi Muraoka (Waseda University) expressed an interest in distance learning from the perspective of institutional support, especially as seen by academic administrators. Frederick Biedenweg (Stanford University) noted that the sharing of images was important as was access to Japanese educational television materials. Also of interest was distance learning in foreign languages, especially Japanese and Korean. Online access to actual foreign language teaching materials was needed. An experience base was mentioned by Jon Root (Oregon State System of Higher Education). They have developed an international degree program requiring internships in foreign countries and some of this involves interactive television. George Boughton (University of Guam) stated that public schools on Guam want Internet access and in this regard they may get some assistance from the United States military on Guam. Lewis Lancaster noted that the University of California at Berkeley will be bringing students in the humanities from Asia to Berkeley for seven weeks of training in computing and networking. Robin Erskine (Australian National University) said that ANU was setting up a very strong technology component and that the university has made several very large databases available to scholars. At the end of the first day, three themes emerged: language instruction, Pacific Rim area studies and science instruction.

The second day focused on discussion of these themes as well as the need to come to a consensus on workable tasks for the group and the Consortium. As a result of this meeting, the following conclusions were reached for possible areas of activity and types of projects:

- **The development of some small bilateral or multilateral projects (e.g., distance learning, joint curriculum development) among PNC members.**
- **The development of information sharing arrangements on language instruction--especially on the resources currently available in both print and video form, with special emphasis on library collections.**
- **A directory of Pacific Rim faculty interests with electronic access capability.**
- **The development of a student and faculty exchange coordination plan to improve on existing arrangements.**

K-12 curriculum plans:

- **A directory of video and network services available at each campus - this will**

facilitate teleconferencing

- **The additional development of sharing agreements for library catalogs and services, especially inter-library loan and document delivery services.**

The above ideas should form the basis for a survey of PNC members to identify further areas for collaboration.

Connectivity and Costs

Co-chairs: Larry Landweber (Wisconsin)

David Wasley (California)

A wide range of topics were raised among the six to eight Consortium delegates participating in the discussion, including new communications technologies, new wide area infrastructure such as fiber optic (FO) cable being laid between New Zealand and Australia, and circuit costs. The role of the Asia Pacific Coordinating Council for International Research Networking (APCCIRN) and the Asia Pacific Engineering Planning Group (APEPG) was mentioned. The APCCIRN is an advisory body that can advise on communications policy issues, and help ensure interoperability and cooperative development of communications networks in the Asian Pacific basin. The APEPG is intended to be technical support for the APCCIRN to advise on issues of connectivity and optimal design of wide area network extensions.

The chairs pointed out that it is not the role of the PNC to build or coordinate the installation of networks or communication links. The PNC encourages this process through information sharing, promoting the development of network accessible resources, and helping to overcome obstacles to closer collaboration between educators and researchers around the Pacific.

Several suggestions for PNC activities emerged from the Work Group discussions. Most involved provision or identification of information needed by institutions wishing to connect to a network or make better use of existing connectivity. This information could be made available by mail or via a PNC information server on-line.

Suggestions included:

- **An on-line database of information or pointers to information to assist in the**

creation of new connections. This database might include information provided by the APCCIRN, PACCOM, or providers of communications services. Prof. Landweber's Connectivity Table would be a good resource. Reference to the NSF Network Providers List would be valuable. Information on reaching and using the Internet NIC, the future AP-NIC (to be operated by the Japanese WIDE NIC (J-NIC)), CNI, the Internet Society, etc. could be provided.

- **A database of individuals or institutions involved in networking or communications services would be very helpful. This could be something like a "yellow pages" for networking. The database entries would include characteristics, capabilities, etc. There could be a fee for any commercial provider who wished to be listed.**
- **Documentation of Appropriate Use Policies (AUP) or other communications policy documents would be helpful. The relevant documents may not be obvious to the first time browser so some general introduction to the topic should be written and included in the on-line server. For example, when does the American NSFNET AUP apply? What considerations apply to China joining the Internet?**
- **The concern was expressed that basic connectivity information ("how to get started") should be free to anyone who can access the PNC server. It should not be necessary to join PNC in order to discover how to join the Internet. More complex information should be restricted to PNC members in order to provide added value to membership.**
- **A database of all universities and institutions of higher education, research, and development organizations in Pacific Rim countries should be created. Information should include generic contact address, telephone and FAX numbers, and email addresses. Individuals at the institutions could be listed as well, if known. This database could be modeled after a similar "European Research and Development Directory" authored by Daniel Karenberg.**
- **PNC could negotiate for a "group rate" for access to commercial databases. This might be in the form of a "promotional rate" to let PNC members see what is available before arranging for a full, direct membership. Access to the database would have to be via the PNC server which would provide the validation.**

Other suggestions include:

- **A list of books or other documents describing Internet technology**
- **A glossary of Internet terms (Note: there is an RFC that has this information).**
- **Information on multi-media databases such as formats and accessibility.**
- **Advisory information regarding networks that charge for traffic or receipt of email, etc. This also should be included in places where contact information (above) might lead someone to send email to a recipient who will have to pay to receive it.**
- **Engineering guidelines for network development, or a pointer to the APEPG, etc.**
- **An "Archie" database and server.**
- **A PNC news group or possibly a news server. Training materials on how to acquire or use email, netnews, gopher, WAIS, etc.**
- **PNC could run a "compression/decompression server" for the benefit of places that have low speed links or networks that charge for traffic. Email to those places would be compressed before forwarding; email from those places would be decompressed by the PNC server so that the message could precede in clear text.**

A variety of access methods should be supported on the PNC server. The main technical problem will be access control to ensure that PNC proprietary information is protected (see above). Access methods to a PNC server should include:

- **Dial-in via high speed, error correcting modems.**
- **Terminal access from x.25 Public Data Networks.**
- **Anonymous FTP from the Internet for basic information; authenticated FTP for PNC proprietary information.**
- **x.500 for directory services and perhaps for "yellow pages".**

Library and Networked Information Resources

Chair Clifford A. Lynch (California)

Co-chairs Min-Min Chang (Hong Kong)
 K.H. Poon (Hong Kong)

Basic principles that might form the basis for cooperation among PNC participants in the area of libraries and networked information resources were proposed. It was hoped that by defining such principles it would be possible to move from there to the development of specific program initiatives that might take place as part of PNC. The major principles that were identified and discussed included:

- reciprocal open access to on-line catalogs
- improved interlibrary loan and document delivery agreements. In this connection it was noted that improving access to the on-line catalogs of the institutions involved would likely lead to increased interlibrary loan and reference traffic for the libraries of these institutions; as library patrons become more aware of what is available, they will request it more often.
- access to special databases, perhaps on a reciprocal exchange rather than a pure open access basis.

It should be stressed that while these principles were discussed and I believe there was considerable support for them, there was no formal adoption of them, and I believe that at least some participating institutions had reservations about one or more of them. In addition, several participants indicated that they were not in any position to make commitments to such principles or projects to implement them on behalf of the institutions they represented.

A number of technical issues related to these objectives were also discussed, including network connectivity, character sets in use and compatibility of MARC records. A preliminary discussion indicated that there was in fact a large-scale adoption of USMARC (LCMARC), which provides a promising basis for sharing. There was also a brief discussion of some of the searching problems that occur when searching in non-Roman character sets; for example, in Japanese there are no spaces between words, leading to very complex requirement for dictionaries and also great complexities in authority control. In the area of character sets, it was noted that the problems are much more complex than simply supporting access to recent literature; for example, ancient Chinese literature employs a much larger character set than current Chinese.

The installed base of on-line catalogs was surveyed, along with the connectivity of these

on-line catalogs to the Internet to support remote access. It appears that several institutions outside of the US are in fact regularly accessing on-line catalogs offered by US institutions. A number of online catalogs in some Pacific Rim nations outside of North America are already accessible on the Internet. In some cases, concerns were expressed as to whether on-line catalogs outside the US had sufficient computing resource capacity to support substantial amounts of extra-institutional access. Some of the US institutions shared their experiences with the amount of extra-institutional load that an institution might expect to encounter when offering public access to an on-line catalog through the Internet.

One promising observation for resource sharing agreements and for obtaining computing resources to support reciprocal public access was that because of the difference in time zones, peak use periods in the far east would correspond to periods of light load in the western US and vice versa.

The group also surveyed both the available specialized database resources available at some of the participating institutions and the types of databases that these institutions were particularly eager to obtain access to. In general, we concentrated on databases that were developed by local institutions, rather than commercial abstracting and indexing databases that had been licensed by various PNC institutions (since sharing of this class of databases would involve payments to the abstracting and indexing database providers). These locally developed databases would include factual databases, specialized abstracting and indexing databases, and databases of source literature that was out of copyright.

Comments on resources in specific nations represented at the meeting are summarized below. (Note: Participants should review these comments and point out any misstatements or errors). It should also be noted that not all participating institutions were represented in the Library and Networked Information Resources track at the conference and hence these notes should not be considered a comprehensive survey of resources available through PNC participants. An additional finding of the track was that there was a compelling need for the development of more extensive directories of available network resources (both free and for-fee).

- United States. There are many large public access on-line catalogs available on the Internet. In addition, many of these systems have mounted abstracting and indexing databases with access restricted to their primary institutional user communities. There are a few special purpose databases available that may be of interest to other PNC participants -- for example ASIA at UC Davis. At present, the availability of source material to support research is extremely limited. Some institutions, such as the University of California, have a substantial numbers of records available in CJK, and are

working on viewers for the vernacular segments of these records. The University of Hawaii is a CARL site and is mounting a particularly rich collection of source material and, including the Bishop Museum, and also extensive abstracting and indexing collections for Pacific Rim materials.

- Hong Kong. There are several on-line catalogs operational. Some institutions have licensed abstracting and indexing databases. They are using CARL's UNCOVER system. There are some free databases accessible through the Hong Kong Telecommunications network, including economic information, stock market quotes, trade, census, government statistics, and laws of Hong Kong and China. USMARC is used extensively. There is a seven institution consortium in Hong Kong that is working collaboratively. These institutions are connected to the Internet. Hong Kong Polytechnic has a citation database available through the Internet. Hong Kong University offers a dental and medial health database; in addition, they offer a bilingual law database (English and Chinese)
- Taiwan. LC MARC is heavily used; there is also C-MARC for CJK material. They have two available Innopac systems and two IBM mainframe based systems available. The Ministry of Education makes data available in business and economics.
- Singapore. At the National University of Singapore most databases are for institutional use only except for the on-line catalog. They have developed a local database of Dangerous Animals and Plants in Asia and the Pacific that is available through Televue; this includes images and could perhaps be made generally available. There is a database called MEDISTAT that covers public health issues; they would like to make this available on a server but need funding. There is a locally developed database supporting area studies that is today available only in print, but they are working on an on-line implementation using MINISIS. Singapore is on the Internet. They have a database at the National University of Singapore called CAESAR that supports legal case studies; this is a full text file on the campus network but is not available outside the university. They are looking at making this commercially available through the Singapore network.
- China. There is a very large database at the national library in Peking. The representative believed that this supported USMARC. They are waiting for an Internet connection and hope to have this in 1993. Peking also offers databases of Chinese law, mechanical engineering, and courseware (covering primarily culture and history).
- Japan. Relatively few libraries are on the Internet. NACSIS is a central site mounting databases; this is on the Internet. NACSIS includes a 1.7 million record on-line catalog

and approximately 50 databases, mostly supporting science and engineering. NACSIS recharges users.

- Thailand. Bangkok hopes to be on the Internet in late 1993.
- Australia was not represented in this track of the meeting, but is known to be well connected to the network and to offer a number of online catalogs for public access currently, as well as some more specialized resources.

Following the presentation and discussion of the task force reports, a discussion was held about future meetings of the PNC. As mentioned earlier, there was strong interest in maintaining the PNC as an active organization. It was agreed that a brief (probably half-day) meeting would be held in conjunction with the Internet Society meeting in San Francisco, California, USA. The Internet meeting dates are August 17-20. The PNC meeting is tentatively set for the afternoon of Monday, August 16, location to be announced. The next full meeting of the PNC will be held in Hong Kong January 17-19, 1994, location to be announced.

The meeting was formally adjourned at 4 pm, January 15, 1993.

Summary: Project Suggestions

Please note that the next section of this report has been prepared as a separate document, listing those areas of interest for potential projects within the PNC. It would be extremely helpful if PNC members could provide the Director or his assistant with information about those project areas that are of interest, since it is important to begin work on projects developing from the areas of mutual concern. The PNC Secretariat will act as a facilitator and clearing house for project information if requested. Alternatively, if a member wishes to begin work on a given project, such as a Directory of Pacific Rim Faculty Interests, an electronic mail message to all members can be done as a way of identifying other PNC members interested in collaborating in such a venture.

Two of the three task forces, Distance Learning, Teleconferencing, and relations to Primary and Secondary Education and Connectivity and Costs, developed lists of tasks or problems that should be undertaken. The task force on Architectures, perhaps reflecting the increased level of development in this area, focused more on the current level of developments in standards and information exchange policies. Accordingly, the list of potential projects is drawn from the work of the first two task forces. It should be kept in mind that there is a great deal of overlap in the areas discussed.

For distance learning, etc., the primary areas of interest were

1. Language Instruction
2. Pacific Rim Area Studies
3. Science Instruction

Project Areas suggested were:

Language Instruction. It would be a useful beginning to know of duo-national or multi-national language instruction projects. Seoul National University (Korea) has an ongoing language instruction project with the University of California, Los Angeles (USA) that had not reached the stage of real-time exchange, as of my last information. An inventory of such projects, including both those at the planning stage and efforts actually underway, would provide a useful baseline.

The preparation of a database of Pacific Rim faculty interests, to be provided on the PNC server, and on other regional servers. City Polytechnic of Hong Kong has expressed an interest in this area and began initial data collection.

The development of a student and faculty exchange coordination plan to improve current student-faculty exchange programs. It may be possible to find funding to do this project. The Council for the International Exchange of Scholars (USA), which manages the USA Fulbright International Exchange program, has begun negotiations with the PNC secretariat to provide a database of electronic communication facilities for Fulbright scholars, both USA scholars at institutions in other countries and for scholars from other countries residing in the USA. The development of this type of database may be congruent with the program proposed by the Council for the International Exchange of Scholars.

A directory of video and network services available at each participating institution. This would be especially useful in arranging teleconferences on multi-institution projects.

The sharing of library catalogues and services, especially document delivery. To some extent, this service already exists for catalog sharing, especially for those libraries on the Internet. Perhaps an assessment of what expansions of this service would be most useful should be the next step.

Many of the suggestions made by the Connectivity and Costs task force are similar in intent to the Distance Learning-Teleconferencing. In this section, several of the comments are repeated from the task force report.

The creation of an on-line database of information or pointers to information to assist in creation of new connections. This database might include information provided by the APCCIRN, PACCOM, or providers of communications services. Prof. Landweber's Connectivity Table would be a good resource. Reference to the NSF Network Providers List would be valuable. Information on reaching and using the Internet NIC, the future AP-NIC (to be operated by the Japanese WIDE NIC (J-NIC)), CNI, the Internet Society, etc. could be provided.

A database of individuals or institutions involved in networking or communications services would be very helpful. This could be something like a "yellow pages" for networking. The database entries would include characteristics, capabilities, etc. There could be a fee for any commercial provider who wished to be listed. It may be possible to include this project within the contract to provide communications information to Fulbright scholars. (see the suggestion about the development of a Directory of Faculty Interests)

Documentation of Appropriate Use Policies (AUP) or other communications policy

documents would be helpful. The relevant documents may not be obvious to the first time browser so some general introduction to the topic should be written and included in the on-line server. For example, when does the American NSFNET AUP apply? What considerations apply to China joining the Internet?

A database of all universities and institutions of higher education, research, and development organizations in Pacific Rim countries should be created. Information should include generic contact address, telephone and FAX numbers, and email addresses. Individuals at the institutions could be listed as well, if known. This database could be modeled after a similar "European Research and Development Directory" authored by Daniel Karenberg.

Information on multi-media databases such as formats and accessibility.

Advisory information regarding networks that charge for traffic or receipt of email, etc. This also should be included in places where contact information (above) might lead someone to send email to a recipient who will have to pay to receive it.

Engineering guidelines for network development, or a pointer to the APEPG, etc.

A PNC news group or possibly a news server. Training materials on how to acquire or use email, netnews, gopher, WAIS, etc.

PNC could run a "compression / decompression server" for the benefit of places that have low speed links or networks that charge for traffic. Email to those places would be compressed before forwarding; email from those places would be decompressed by the PNC server so that the message could precede in clear text.

