

CHAPTER 5 Meetings and Organizations in the 1980s

Kilnam Chon

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The International Academic NetWorkshop (IANW) was one of the earliest global Internet-related gatherings, starting in 1982 as an annual workshop between North America and Europe. Peter Kirstein chaired the first workshop in 1982, and Lawrence Landweber led IANW from its second meeting in 1983 until its final meeting in 1989.

The Network Working Group (NWG) of the ARPANET Project, established in the late 1960s, was responsible for developing Internet standards. The first RFC document of NWG was Request For Comments 1: Host Software, authored by Steve Crocker on 1969.4.7. A related international group, called the International Network Working Group, was created in 1972. The Internet Engineering Task Force (IETF) was founded in 1986 to take over the Internet standardization activities described in the Request For Comments (RFC), the Internet standards document from the Network Working Group of the ARPANET Project.

Several countries, including Australia, India, Japan, and South Korea, began computer network research and development in the 1970s. All of them had contacts with North America and/or Europe, including exchanges with the ARPANET Project, before the 1980s regarding network research and development, but there were no exchanges among them in Asia. One of the early Internet-related meeting participants from Asia was Kilnam Chon, who took part in an informal meeting on UUCPNET during the 1982 USENIX Conference in Boston, where he exchanged information with organizations involved in the UUCP-based networks in North America (seismo, hplabs, etc.) and Europe (mcvox in the Netherlands), and an agreement was made to collaborate on UUCPNET connections [Chon 2013]. He also took part in the NUS/UNESCO Workshop on Microcomputer Applications in February 1984, where he suggested developing what became AsiaNet, a UUCP-based regional computer network in Asia. AsiaNet was launched that same year with partners from Indonesia, South Korea, and Singapore, in addition to Australia and Japan, which did not participate in the workshop [Chon 1985b; NUS 1984]. Other Asian countries and regions that joined AsiaNet later in the 1980s include Hong Kong, Taiwan, and Thailand.

The International Academic NetWorkshop (IANW) held its first meeting in 1982 to coordinate research and educational networks between Europe and North America. Kilnam Chon participated in the IANW meeting in Stockholm during the summer of 1985, becoming one of the first participants from outside Europe or North America. There, he connected with many organizations involved in computer networks, including ARPANET, BITNET, and various European networks. At that time, the IANW was the only global network coordination meeting conducted among intercontinental partners. For more information on IANW, refer to Section 5.1 IANW by Chon and Appendix D IANW by Landweber, available at <http://InternetHistory.asia/book1>. Finding the information exchanges highly valuable, Chon reached out to his counterparts in Australia, Indonesia, and Japan to suggest their participation in future IANW meetings. Australia and Indonesia started participating in 1986, while China, India, Hong Kong, Japan, Malaysia, New Zealand, and Singapore began participating in 1987.

International Academic Networkshop – Asia-Pacific (IANW-AP) Meeting was held during

Dublin IANW Meeting in 1986 to coordinate research networking in Asia-Pacific, and the

IANW-AP meeting included Australia, Indonesia, and South Korea as participants.

Several countries in Asia including Australia, Israel, New Zealand and South Korea also joined CSNET, beginning with Israel in 1983. See Section 4.2 CSNET by Chon for details on CSNET. Please also refer Appendix CSNET by Landweber in

<http://InternetHistory.asia/book1>. CSNET members from Asia as well as AsiaNet members also joined in discussions at the annual IANW-AP meetings during IANW.

The Pacific Computer Communication Symposium (PCCS) was held in Seoul in October 1985 [PCCS 1985]. This global Internet conference was attended by 300 participants from Asia, Europe, and North America to coordinate work on the Internet and other computer networks worldwide, as well as to promote discussion on research and development in computer networks and data communications. As a follow-up event, the Joint Workshop on Computer Communications (JWCC) was launched in 1986, initially involving participants from Northeast Asia but eventually expanding to include all of Asia and beyond. The JWCC has continued to be active, with the name later changed to ICOIN in the late 1990s. Similarly, the SDN Workshop was established as a domestic workshop for South Korean participants in 1986. Its name was later changed to the Winter Computer Communications Workshop, and again

changed to the Summer Workshop on Computer Communications when the annual workshop was moved to summer.

Norman Abramson of the University of Hawaii, who developed a satellite network for ARPANET in the 1970s, led a UNESCO-funded project in 1984-85 aimed at promoting data communications and information exchange networks [Abramson 1985]. During that period, he visited several countries in Asia, including Singapore, the Philippines, Thailand, India, and China, to evaluate the potential for developing computer networks there and to give lectures on computer networking.

The Pacific Communications Network (PACCOM) Project was launched in 1989 to connect various Asian countries to the US Internet through hubs at the University of Hawaii and NASA Ames. See Section 3.4 for details on the PACCOM project. The project was initially funded by the National Aeronautics and Space Administration (NASA) as well as other participating countries, including Australia, Hong Kong, Japan, South Korea, and New Zealand. The National Science Foundation (NSF) and US Department of Energy (DoE) joined NASA as the US funding agencies in 1991, with the NSF serving as its contract agency. PACCOM held project coordination meetings once or twice a year, typically in Hawaii. (summer 1991, summer 1992, winter 1993, etc.).

5.1 International Academic Networkshop (IANW)¹

Kilnam Chon

¹ This article is a personal account written by Kilnam Chon. An additional article with the same title by Lawrence Landweber, the chair of the International Academic Workshop (IANW) for all years except the first year is available in Appendix D of Book 1 (1980s) on the Asia Internet History Project website, <http://InternetHistory.asia>.

Apart from the two ARPANET nodes in the UK and Norway, the first major international collaborations on computer networking occurred in the 1970s through the International Network Working Group (INWG) and the International Conference on Computer Communications (ICCC).

The 1980s marked the creation of another major intercontinental collaboration called the International Academic Networkshop (IANW). Its first meeting was held in London in 1982 and was chaired by Peter Kirstein of University College London, a university that hosted one of the two ARPANET nodes outside the USA. Kirstein did not attend the second workshop in Oslo in 1983, so Lawrence (Larry) Landweber took over as chair and continued to lead the workshop until the final gathering in Sydney in 1989. After that, the group was dissolved and

replaced by the International NETWORK Conference (INET), which held its first conference in 1991. Some referred to IANW as “Landweber’s Workshop.”

IANW focused on cooperation and information exchange, whereas the International Network Working Group (INWG) in the 1970s concentrated on technology development. IANW tended to be informal, with updates provided by each participating country and network, followed by discussions on specific topics. The IANW sessions lasted three or four days, and all participants stayed at the same hotel hosting the workshop. The human networks developed through IANW may be its most significant contribution, especially at a time when there weren't many global events dedicated to computer networking, including the Internet.

The IANW was held from 1982 to 1989, with participation from the following countries (years indicate the first participation) [Landweber 2013]:

1982 London	Italy, Norway, Sweden, Switzerland, UK, USA, West Germany
1983 Oslo	Finland
1984 Paris	Belgium, Canada, France, Ireland, Israel, Spain
1985 Stockholm	South Korea, Netherlands
1986 Dublin	Australia, Indonesia
1987 Princeton	Brazil, Chile, China, Costa Rica, Hong Kong, India, Japan, Malaysia, Mexico, New Zealand, Singapore
1988 Jerusalem	Denmark, Ivory Coast
1989 Sydney	Venezuela

The IANW has not been well documented. We at the Asia Internet History Project tried to gather as much information as possible on the IANW; the information we collected is available at the Project’s website, <http://InternetHistory.asia/lib/ianw-proceedings>.

Kilnam Chon visited the University of Wisconsin to meet Lawrence Landweber (and Douglas Comer at Purdue University) on a cold day in May 1984 to discuss CSNET. Chon then learned about IANW, which Landweber had been chairing since 1983. Chon naturally requested to participate in IANW, and he was allowed to join from 1985 onward – the first time a representative from outside North America and Europe, other than Israel, was present. When he went to the hotel lobby in Stockholm where the 1985 IANW was held, he saw a person with a very thick beard sitting alone. They greeted each other, and Chon discovered that the gentleman was Teus Hagen, who was in charge of EUnet. They had been communicating for a few years since 1983 to coordinate UUCP networking between Asia (AsiaNet) and Europe (EUnet), but this was the first time they met in person. Kilnam Chon also had various coordination meetings with delegates from the USA, since the Pacific Computer Communications Symposium (PCCS) was scheduled to be held four months later in Seoul. He took those occasions to invite some European delegates to PCCS as well.

Kilnam Chon valued what IANW offered, especially its combination of human networking and information exchange. He encouraged his AsiaNet colleagues to participate in future IANWs. Australia and Indonesia joined the 1986 IANW in Dublin, where a regional meeting for Asia-Pacific nations, called IANW-AP, was established, and its first meeting was held on the spot. He also discussed with Steve Wolff from the US NSF the possibility of establishing direct international links via IPv4, meaning connecting the Internet in the USA to foreign IPv4 networks, during one of the evenings. Wolff agreed to this idea and committed to working on it as soon as possible. A few months later, we were informed that the newly created NSFNET in 1986 would support direct IPv4 links to non-US research networks.

Kilnam Chon met Michael Stanton from Brazil in the UK in 1987 and encouraged him to participate in the 1987 IANW, which was to be held in Princeton, USA. It was the first time

Latin America participated in the IANW.

Following the Princeton IANW, delegates from Europe and the USA traveled to Washington, D.C. to discuss trans-Atlantic connections between Europe and North America in 1987, where they decided to establish the Coordinating Committee for Intercontinental Research Networking (CCIRN) in 1988. Asia was invited to join CCIRN three years later in 1991.

The 1988 IANW held in Jerusalem marked the first time Africa participated, making IANW a truly global meeting with representation from all five continents. By 1989, when IANW held its last meeting, 31 countries had participated. The 1989 IANW in Sydney hosted about 200 participants from roughly thirty countries. It became clear that an informal workshop was no longer suitable for global Internet cooperation, leading to the decision to end the IANW and establish a new global conference called the International Network Conference (INET). The first INET was held in Copenhagen in 1991. When the Internet Society (ISOC) was founded in 1992, it was decided that ISOC would oversee the coordination of INET from that year onward.

5.2 Internet Engineering Task Force (IETF)

Kilnam Chon

The Internet Engineering Task Force (IETF) Mission Statement describes the IETF as “a large open international community of network designers, operators, vendors, and researchers concerned with the evolution of the Internet architecture and the smooth operation of the Internet. It is open to any interested individual” according to “The Tao of IETF: A Novice’s Guide to the Internet Engineering Task Force” [Harris 2001].

The Network Working Group (NWG) was formed as part of the ARPANET project in the late 1960s, the first Request for Comments (RFC) document, RFC 1, was written by Steve Crocker in 1969 [Crocker 1969]. RFC documents serve as the standards for the Internet and were initially managed by the NWG.

In 1972, the International Network Working Group (INWG) was formed at the first International Conference on Computer Communications (ICCC) in Washington, D.C., with the aim of collaborating on network protocols internationally [McKenzie 2011; Zakon 1997]. Later, the INWG was renamed to IFIP WG 6.1.

The Internet Engineering Task Force (IETF) was founded in 1986 to develop and refine Internet standards through the preparation of RFCs and working groups, among other forums. The first meeting of the IETF was held on January 16, 1986. Initially, the group met four times per year, but the meeting frequency was reduced to three times annually starting in 1991. Participation by overseas experts, including Asian representatives, began in the late 1980s. In 1990, the first meeting was held outside of the United States, in Vancouver. In 1993, the IETF held its first meeting outside of the North American continent, in Amsterdam. The first meeting held in Asia took place in 2000. To date, six IETF meetings have been held in Asia.

Pacific region:

- 2000.03 Adelaide
- 2002.07 Yokohama
- 2004.02 Seoul
- 2009.11 Hiroshima
- 2010.11 Beijing
- 2011.03 Taipei

The IETF actively tries to hold its meetings in different locations around the world as often as possible. However, meetings have been held in Asia less frequently than desired, especially considering that Asians make up over fifty percent of the world's Internet users. Additionally, as of 2012, no IETF meeting had taken place in Latin America or Africa.

The Internet Research Task Force (IRTF) was established in 1989 and collaborates closely with the IETF. The IRTF focuses on long-term research issues, while the IETF concentrates on short-term engineering problems, including standardization.

The Internet Society was established in 1991. The Internet Engineering Steering Group (IESG) of the IETF, along with the Internet Architecture Board (IAB), RFC Editors, and the Internet Assigned Numbers Authority (IANA), received a charter from the Internet Society. Prior to that, the IETF was under the auspices of the United States government. Today, IANA functions under the Internet Corporation for Assigned Names and Numbers (ICANN).

The current IETF functions with the following subgroups:

- Internet Engineering Steering Group
- Working Groups
- Birds of a Feather
- IETF Administrative Oversight Committee

The working groups are organized into the following areas: General Area.

- Applications Area
- Internet Area
- Operations and Management Area
- Real-time Applications and Infrastructure Area
- Routing Area
- Security Area
- Transport Area

The most recent IETF meeting—held in November 2013—was the 88th gathering. The typical number of participants at recent IETF meetings is around 1000, with a peak of 2800 attendees at the San Diego IETF meeting in 2000.

Regarding RFC publication, Asia still trails behind the United States and Europe, but China and other Asian countries have been publishing significantly more RFCs in recent years. This has led to Asia contributing a fairer share of Internet standards. However, Asia remains behind in many areas like participation in the IAB and IESG compared to North America and Europe.

5.3 International Academic NetWorkshop – Asia-Pacific (IANW-AP)

Kilnam Chon

Kilnam Chon participated in the 1995 International NetWorkshop (IANW) in Stockholm. He suggested that Bob Kummerfeld of Australia, Jos Luhukay of Indonesia, and Haruhisa Ishida of Japan, among others, participate in the IANW in the following years. When Kummerfeld, along with his Australian colleagues and Luhukay, participated in the 1996 IANW in Dublin, it was decided among the Asia-Pacific group to start meeting during IANW to discuss network coordination in the region, leading to the creation of the International Academic NetWorkshop – Asia-Pacific (IANW-AP). This was one of the first gatherings of Asians to discuss issues related to the Internet and other computer networks. Some IANW participants from Europe and North America also attended the first IANW-AP meeting as observers.

During the meeting, the participants discussed various computer networking meetings, including the annual Joint Workshop on Computer Communications (JWCC), which originated from the Pacific Computer Communications Symposium (PCCS) in 1985. They also talked about AsiaNet, proposed at the NUS/UNESCO Workshop at the National University of Singapore in February 1994 and implemented later that year. Additionally, the participants shared updates on the status of computer networking in their respective countries and regions across Asia. At that time, it was decided to encourage other Asian countries to participate in both IANW and IANW-AP in subsequent years.

Following that initial meeting in 1986, the IANW-AP forum was held annually until 1989, when IANW was phased out. It served as a platform for IANW participants from Asia to discuss topics such as AsiaNet, exchange information on computer networking, and share ideas about events both in Asia and around the world. At the first IANW-AP meeting in Dublin in 1996, three countries participated: Australia, Indonesia, and South Korea. The next year, at the 1987 IANW meeting in Princeton, several other countries—China, Hong Kong, India, Japan, Malaysia, New Zealand, and Singapore) joined in the IANW-AP discussions. The IANW-AP stopped meeting after the IANW ceased meeting following its last annual workshop held in Sydney in 1989. More formal and elaborate meetings among Asia-Pacific nations had to wait until the creation of APCCIRN in 1991.

5.4 Pacific Computer Communications Symposium (PCCS)

Kilnam Chon

As previously discussed, Internet-related meetings featuring workshops, technical sessions, and “Birds of a Feather” sessions began in the early 1980s at various locations. However, all early meetings were held in Europe or North America, with none in the Asia-Pacific region. Some of the key individuals in Asia felt that a meeting in Asia was very important.

Concrete discussions about such a meeting first took place during the NUS/UNESCO Workshop in February 1984. During the same workshop, the decision to create AsiaNet was also made. South Korea volunteered to organize and host the first conference on the Internet and other computer networks in the fall of 1985. The conference was named the Pacific Computer Communications Symposium (PCCS) and was held in October 1985. This event became one of the first global Internet conferences, with around 300 participants from fifteen countries across three continents: Asia, Europe, and North America.

Participants at PCCS came from various groups, including:

1. Unix conference participants (USENIX and UNICON)

Unix conferences such as USENIX and UNICON covered UUCPNET and Usenet, as well as Unix software including the Berkeley Software Distribution (BSD), which included software for TCP/IP protocols. Speakers on UUCPNET and Usenet from the USA and Europe were also invited to speak.

2. USA: CSNET and IANW

Several CSNET project members, including staff from the United States National Science Foundation (NSF) that managed the CSNET project, participated in the symposium. Most of these individuals were also regular participants at IANW.

3. Europe: IANW, EARN, and national networks

Several Europeans also participated in the symposium, showcasing activities such as

BITNET in Europe (known as EARN) and various research and education networks.

4. Asia: AsiaNet and Japanese academic network communities

Many member countries and regions participating in AsiaNet, the UUCP-based regional network in Asia, joined the symposium. These included Australia, Hong Kong, Indonesia, Japan, South Korea, Singapore, and Taiwan, among others. Several Japanese groups also sent representatives to the symposium. They included: N-1 Net (the university network connecting university computer centers); IPSJ and other academic societies of information science and telecommunications; and JUNET (the UUCP-based network in Japan).

5. IEEE

Many members from the IEEE participated in the symposium thanks to the coordination of the symposium program co-chair, KH Kane Kim.

The objectives of the symposium were as follows:

- to serve as a global Internet-related conference, as there were none in the early 1980s
- to provide a forum for Asians to come together to discuss Asian concerns
- to enable participants to share information and to build and renew personal contacts
- to furnish up-to-date information on computer networking, including the Internet

The Internet was heavily used throughout the symposium. During its preparation, thousands of email messages were exchanged worldwide. At the event itself, a server from South Korea was set up on site to handle the email needs of the participants.

During PCCS, a US-Asia Joint Workshop on Computer Networks took place. It was initially planned as a collaborative workshop between Asia and the United States, as indicated by the workshop title. However, it evolved into a global exchange, featuring presentations from Europe (including EARN and DFN) alongside those from the Asian and American participants.

An AsiaNet meeting was also held during the symposium. At that time, the participants decided to organize a Joint Workshop on Computer Communications (JWCC) in Asia starting the following year. The Korean group also met and agreed to hold an annual SDN Workshop beginning in the winter of 1986. It was renamed the Winter Computer Communications Workshop (WCCW) in 1987, and later became the Summer Computer Communications Workshop (SCCW).

The five-day symposium featured a comprehensive program, including the presentation of 108 refereed papers and many additional presentations:

- Four one-day tutorials.

- Two keynote speeches
- Twenty parallel sessions
- One panel discussion session
- One workshop (US-Asia Joint Workshop on Computer Networks)

5.5 Joint Workshop on Computer Communications (JWCC)

Kilnam Chon

An international workshop called the Joint Computer Communications Workshop (JCCW) was proposed during the PCCS in 1985, along with an annual domestic workshop for South Koreans called SDN Workshop. The first JCCW took place in the summer of 1986 at Sorak Mountain in Korea, with participants from Japan and South Korea.

In addition to technical presentations, meetings on network coordination were also held. During the early years, most participants at the JCCW came from Japan and Korea, with other countries and regions in Northeast Asia participating later, followed by those in Southeast Asia.

The JCCW was renamed the Joint Workshop on Computer Communications (JWCC) in 1987 and later became the International Conference on Information Networking (ICOIN) in the 1990s [ICOIN 2012]. Please visit the ICOIN website at www.icoin.org for more information. JWCC/ICOIN is one of the oldest ongoing Internet-related conferences, with its 28th event held in 2014. The only older Internet-related conferences still active are SIGCOMM, which started in 1977, and INFOCOM, which began in 1982.

The following is a record of the JWCC/ICOIN meeting dates and locations:

- 1st JWCC 1986.7 Sorak Mountain, South Korea
- 2nd JWCC 1987.6.18-20 Tsukuba, Japan
- 3rd JWCC 1988.7. 7-9 Jeju, South Korea
- 4th JWCC 1989.7 Tokyo, Japan
- 5th JWCC 1990.7. 5-7 Gyeongju, South Korea
- 6th JWCC 1991.7.17-19 Kitakyushu, Japan
- 7th JWCC 1992.7.14-16 Jeju, South Korea
- 8th JWCC 1993.12.12-14 Taipei, Taiwan
- 9th ICOIN 1994.12.12-14 Osaka, Japan
- 10th ICOIN 1996.1.29-31 Gyeongju, South Korea
- 11th ICOIN 1997 Taipei, Taiwan
- 12th ICOIN 1998 Tokyo, Japan
- 13th ICOIN 1999 Tokyo, Japan
- 14th ICOIN 2000 Hsinchu, Taiwan
- 15th ICOIN 2001 Beppu, Japan
- 16th ICOIN 2002 Jeju, South Korea
- 17th ICOIN 2003 Jeju, South Korea
- 18th ICOIN 2004 Busan, South Korea
- 19th ICOIN 2005 Jeju, South Korea
- 20th ICOIN 2006 Sendai, Japan
- 21th ICOIN 2007 Estril, Portugal
- 22th ICOIN 2008 Busan, South Korea
- 23th ICOIN 2009 Chiangmai, Thailand
- 24th ICOIN 2010 Busan, South Korea
- 25th ICOIN 2011 Kuala Lumpur, Malaysia
- 26th ICOIN 2012 Bali, Indonesia
- 27th ICOIN 2013 Bangkok, Thailand
- 28th ICOIN 2014 Phuket, Thailand
- 29th ICOIN 2015 Siem Reap, Cambodia
- 30th ICOIN 2016 Kota Kinabalu, Malaysia
- 31st ICOIN 2017 Da Nang, Vietnam
- 32nd ICOIN 2018 Chiang Mai, Thailand

33rd ICOIN 2019 Kuala Lumpur, Malaysia
34th ICOIN 2020 Barcelona, Spain
35th ICOIN 2021 Jeju, Korea
36th ICOIN 2022 Jeju, Korea
37th ICOIN 2023 Bangkok, Thailand
38th ICOIN 2024 Ho Chi Min City, Vietnam
39th ICOIN 2025 Chiang Mai, Thailand
40th ICOIN 2026 Hanoi, Vietnam

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