

APPENDIX E What We Learned From Asia Internet History Project

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Abstract

The Asia Internet History Project was launched in 2011, and four books have been written to cover the period from the beginning of computer network in the 1970s until the 2010s. We covered various aspects of the Internet. We also covered national and regional Internet histories as well as the global Internet history. Articles in the four books were written by one hundred authors from thirty-one countries and regions. Fifty-five advisers and more people on the project mailing lists reviewed the articles.

Project Website

Asia Internet History Project, <http://InternetHistory.asia>

Introduction

While various books and articles on the history of the Internet in the United States are available [Leiner 2003; Lynch 1993; Wikipedia 2020], there is a dearth of informative books or articles on the global Internet history or regional Internet histories of various continents. Through encounters with many people discussing the Internet history in Asia, we realized that they lacked an understanding of how the Internet was developed in Asia and the world during the last century. Meantime, some first-generation Internet pioneers in Asia started passing away. Some of the Internet pioneers in Asia met during the Global INET Conference in the spring of 2011 to discuss writing a history of the Internet in Asia including how the Internet started in this region in the last century. We formed the Coordination Committee, and decided to write the Asian Internet History of the Twentieth Century in the fall of 2011 [Asia 2020], and agreed for Kilnam Chon to be the chief editor of the Asia Internet History Project. We formed an Advisory Group in 2012 with fifty-five members in over thirty countries from the five continents.

We decided on the following guidelines for the Asia Internet History Project;

- The Chief Editor writes overview articles for each chapter.
- We ask somebody who is in charge of a particular topic to write an article on the topic.
- Develop an elaborate Year Table for both Asia and the world with a link to supporting documents, but without a time order within the year unlike the timeline. In many cases, it is not clear which month a particular event took place. In some cases, even the year the event took place varies due to different definition of the event date.
- Develop a comprehensive reference list.

- Interview many Internet pioneers with video recording for archival purpose.
- We structured chapters and appendixes including snapshots, references and a Year Table so that the Asia Internet History books would be valuable when people write their national Internet histories.
- We decided to divide the Twentieth Century history into two parts; (i) the 1970s and 1980s, and (ii) the 1990s.

We covered the following topics as chapters in two books: First Decade (1980s) and Second Decade (1990s);

First Decade (1980s)

Beginning
Internet in the 1980s
Internet-related networks in the 1980s
Meeting and organizations in the 1980s
Snapshots of the Internet around 1990
Personal essays of Internet pioneers
Retrospective

Second Decade (1990s)

Asia Pacific Networking Group
International meetings and organizations
Spinoff organizations of Asia Pacific Networking Group
Network operators' groups
Research and education networks
Names and numbers
Internationalization and localization
Snapshots of the Internet around 2000
Retrospective

After we finished writing the original scope of an Internet history in the Twentieth Century in two books in 2014 and 2015, respectively, we decided to write on an Internet history of the first decade of the Twenty-First Century even though it may be rather early to cover this period in late 2010s. The primary reason is that it would be much easier for us to write the first decade of this century than others since we have the necessary experience and infrastructure to write an Internet history. Please refer to the overall schedule on the home page of the project website, InternetHistory.asia. In the 2019, we further decided to write the second decade of this century.

We covered the following topics as chapters in the third and fourth books;

Third Decade (2000s)

- Commercial Internet services
- Social media
- Internet governance
- Cyber security
- Civil society
- Snapshots of the Internet around 2010
- Online education
- Retrospective

Fourth Decade (2010s)

- Digital space and its aspects
- Governances of digital space and its aspects
- Snapshots of the Internet around 2020
- Global conferences
- E-commerce
- Interview projects
- Social media – updates
- Retrospective

Please refer InternetHistory.asia website for the complete tables of contents of these four books [Asia 2020].

We also covered brief histories of all continents since it is necessary to know what happened on other continents in order to understand the global Internet development due to the global nature of the Internet. We also covered many global events such as the International Academic NetWorkshop (IANW), International Network Conference (INET), and Developing Country Workshops since these and some other important global events have not been well covered in other books and articles. Many of the Internet history books and articles tend to cover only national events with limited coverage of international events. Our project ended up having global coverage of the Internet history, not just on Asia. Thus, “Internet History – Asian Perspective” may be more appropriate than “Asia Internet History” as the title of the four books we published.

The Asia Internet History project website, <http://InternetHistory.asia> keeps all important outputs of the project including all four books and interview videos which we regularly update. We made an arrangement to keep the website for many decades.

Why Internet history now?

Initial developments of TCP/IP networks in Asia in the last century have not been documented well. Many people including even Internet leaders and experts in last century do not have a solid historical understanding of the initial developments of the TCP/IP networks that started to be called the Internet (or internet) from the mid-1980s. Thus, we, the Internet pioneers in Asia, realized that it is necessary to write good records on the Internet development history of the last century. This is particularly important since most Internet

pioneers in Asia are still capable of writing articles on their efforts in the Twentieth Century. However, we may not have much time left as some Internet pioneers have been passing away. Moreover, we would like to record the Internet pioneers on video while they are still available to be interviewed. We are fortunate since many pioneers were still available to write articles and to be interviewed during the second decade of the twenty-first century after we started the Asia Internet History Project in 2011 [Asia 2020].

We are benefitted by the availability of the Internet to write articles on the Internet history or any other history. Searching articles is far easier now with the availability of the Internet with many valuable websites such as Internet Archive, Internet World Stats, and Wikipedia even though searching original articles remains challenging [Archive 2020; Internet 2020; Wikipedia 2020].

We used our project website, InternetHistory.asia extensively to write the Asia Internet history books. We post all articles to the project website, InternetHistory.asia, for review as they became available. We revise articles as appropriate, and then post the revised articles to the website. Through this iterative process with reviews by the project members as well as by the public, we come to the final version which we post to the website for public access. Hardcopy versions are made as snapshots of the constantly evolving online books of the Asia Internet History Project. When we receive a new article, we may simply add it to the online book without waiting for the next hardcopy edition of the book. Traditional copyright may not be suitable for the above scheme. We decided to change to a Creative Commons License for the third book on the Third Decade (2000s) as well as the fourth book on the Fourth Decade (2010s). This also helped to reduce the hardcopy price substantially.

The Internet may be unique in many senses, and we need an innovative approach to write a history on the Internet. It is global, and critical social infrastructure covering every aspect of our lives. It is extremely interdisciplinary and its development moves very fast. Traditional approaches to write a history may not work well. Thus, we used the Internet for all aspects of our activities as we have described in this section.

Global and regional Internet histories

The Internet development has proceeded internationally from its early stage in the 1970s. As soon as ARPANET was developed in 1969 along with similar computer networks in the UK and France in the same period, international collaboration commenced on research, development, and standardization through the International Network Working Group (INWG) in the early 1970s as well as the Network Working Group (NWG) of ARPANET from 1969. International Academic Networkshop (IANW) was held annually in the 1980s, followed by INET with its accompanying event, Developing Country Workshop in the 1990s. Please refer to Book 1(1980s) and Book 2 (1990s) of the Asia Internet History Project for details. Through these and other events, we had very close international collaboration on the Internet development and its deployment around the world. Thus, writing a regional or national Internet history also requires a good understanding of what took place in other regions and countries. Writing a global Internet history would be ideal, but this would require tremendous resource. Writing a regional Internet history requires a great deal of resource, as we realized

through the Asia Internet History Project. Thus, we have not seen a regional Internet history book at a continental level yet, and the Asia Internet History Project was the first effort to write a regional Internet history. It should be noted that this requires additional effort to cover inter-continental interaction on the Internet such as the International Network Working Group in the 1970s, International Academic NetWorkshop in the 1980s, and INET and Developing Country Workshop in the 1990s as described earlier. We also need a comprehensive year table or timeline to cover global Internet events as well as regional events. Fortunately, we have good timeline developments at the Computer History Museum, and Hobbs among others as well as extensive coverage of the Internet events in Wikipedia [Computer 2012; Hobbs 2015; Wikipedia 2020; Asia 2020]. These resources will be valuable in writing any regional or national Internet history now. However, we need to harmonize these year tables and timelines.

A global Internet history could be a collection of these regional and national Internet history books and articles rather than writing a global Internet history which would require much effort and time. Other efforts that are necessary include the Internet histories of specific areas such as research networks by Davies and Bressan [Davies 2010]. Other areas such as education, security, internet governance and commerce are good candidates to write global Internet histories on.

Internationalization and localization

ARPANET and its successor, the Internet uses ASCII, a seven-bit code used in the USA unlike many other computer networks with the International standard codes. An eight-bit, a sixteen-bit, or a thirty-two-bit code system is needed for most languages including Asian languages. Thus, we faced localization problems as soon as we tried to use local languages on TCP/IP networks including the Internet in the 1980s. Ideally, any network system should be internationalized when it is designed initially. Localization to a specific language environment is then simple and easier. This was not, however, the case of ARPANET and the Internet.

One of the first tasks when we used TCP/IP networks including the Internet was to define a code system to be used in a particular local language environment. In the early 1990s, upon its founding, Asia Pacific Internet Group (APNG) made several working groups including Internationalization and Localization Working Group [Asia 2020]. Please refer Chapter 9 of Asia Internet History, Second Decade (1990s) for detail. Its first task was to define local scripts to be used in the Internet. Japan and Korea developed their first Request for Comment (RFCs) documents for Internet Engineering Task Force (IETF) on local scripts in 1993. The RFCs on other scripts including Chinese and Vietnamese were developed later in the 1990s and 2000s.

Naming was the next major challenge of the Internationalization and Localization Working Group, and APNG decided to take on the Internationalized Domain Name (IDN) as its next major project as described in Section 9.2 of Asia Internet History, Second Decade (1990s). There were two approaches to handle this issue, either using the eight-bit code system which offers a technically clean solution but loses backward compatibility, or using the existing

seven-bit ASCII code system which offers the backward compatibility with a very poor internationalization framework. The Internet technical community decided to keep using the ASCII code. Eventually, IDN was standardized at IETF in the 2000s. By then, many people were using names under local scripts in the web environment through searching service. This was followed by similar usage on smartphone. Thus, IDN may be missing a window of opportunity when the window was widely open in the 1990s.

Content and searching in local languages are the next major challenges. These areas require much capital investment. Thus, most minor local languages are not supported well in these areas. The content in local languages has been deployed well among developed countries with large populations. But others countries have not been as successful. Searching services meanwhile are much worse. Only a few countries have good local search services including China, Russia, and South Korea. Others rely on localizations of the search services offered in USA.

What is next?

Once we write most regional Internet history books as well as many national Internet history books, we may focus on the Internet histories of specific areas such as research network, education, commerce, security, Internet governance and so on. In the Asia Internet History Project, we covered many of these areas with overviews followed by regional and national histories. Specifically, we covered the following areas in the four books:

- Network operator's group (NOG)
- Research and education network (REN)
- Internationalization and localization
- Commercial Internet service
- Social media
- Digital space
- Internet governance and digital governance
- Cybersecurity
- Civil society
- Online education

Remarks

Developments of year tables and timelines on the Internet were very important efforts as we stated in the earlier section. Both global and regional lists are useful for other regions and nations to develop their own Internet histories. Thus, harmonization of these lists as well as standardization of the scheme, especially defining an event date, is necessary. It is also very important to have relevant documents to back up any given event. We quoted Wikipedia articles when we could not find any adequate documents to refer to.

There are several very useful websites to develop the year tables and timelines including

the following:

Internet Archive – on past snapshots of various websites,
Internet World Statistics – statistical information, and
Wikipedia – introductory and comprehensive information on many items.

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[Editorial: This article was originally published for Internet Society in 2016.]