Korea - Open science country note

Open science and the national context

In Korea the "Creative Economy" policy for technology and innovation states that Korean creativity and imagination will be combined with science, technology and ICT to create new industries and markets, and to make existing industries stronger and thus create decent jobs on the basis of the "Government 3.0" paradigm. Major open science initiatives include 1) the NTIS (National Technical Information Service), for effective promotion of national R&D; 2) the NDSL (National Digital Science Library), to improve productivity of national R&D; and 3) OAK (Open Access Korea), for the enhanced openness of scholarly information. These initiatives provide science information services such as National R&D Programmes, National R&D Participants, National R&D Outputs, National Equipment/Facilities, and other R&D-related information for researchers as well as the general public. They are not connected with Creative Economy policy or Government 3.0. Rather, NTIS and NDSL are part of the national information service under Article 26 of the Framework Act on Science and Technology, the main policy for science and technology innovation

Open science research and innovation actors

NTIS, NDSL and Open Access Korea (OAK) are representative initiatives carried out for the purposes of strengthening the science and technology base, creating an innovative environment, and boosting the openness of R&D information in South Korea.

The National Technical Information Service is led by the Ministry of Science, ICT and Future Planning (MSIP), and operated by the Korea Institute of Science and Technology Information (KISTI). The Korea Institute of S&T Evaluation and Planning (KISTEP) and Korea Basic Science Institute (KBSI) are involved with NTIS as well. Researchers performing government-supported projects funded by 17 ministries have generated research outputs and submitted the output data through the NTIS platform. Recently, KISTI has developed National Science and Technology Information Service "Open Data Portal", where S&T data sets generated from government-supported research institutes are consolidated and made available to the public.

S&T information through the NTIS will be used in research by universities and researchers to develop software for businesses and the general public, and to commercialise business products from enterprises and research institutes.

The budget for the entire NTIS project has been approximately KRW 90 billion for the past 9 years.

NDSL, an S&T information portal, is an integrated search service designed to enhance national research productivity by MSIP. NDSL is operated by KISTI. S&T information in NDSL has been open to the public through the NDSL Open Service (NOS) since 2007. NOS has benefited not only domestic corporations such as Samsung and NHN that have led innovation and advances in technology, but also global corporations such as ExLibris and EBSCO. The budget assigned to the NDSL project for the past three years has been approximately KRW 35 billion.

Open Access Korea, led by the Ministry of Culture, Sports and Tourism (MCST) is initiated by KISTI. The OAK project was transferred to the National Library of Korea (www.nl.go.kr/english/index.jsp [1]) in 2014.

Open science and business sector actors

The Korean Association of Medical Journal Editors (KAMJE) built the KoreaMed Synapse website so as to provide open access to the full-text articles of Korean medical journals and promote the international distribution of those journals. One hundred and thirty five journal titles are included in the database. The landing pages of journals are made easily accessible from other journals via the DOI system as well (http://synapse.koreamed.org/Overview.php#7/ [2]).

Seoul National University provides educational support to Laos through the "Lee Jong Wook Seoul" project. The Open Access Repository of Laos (www.laospace.org/ [3]) was built under this project.

The National Research Council of Science and Technology initiated a project called "Sharing and Marketing Intellectual Property of Government-supported Research Institutes" so as to improve research output and support the diffusion of the output throughout society (www.nst.re.kr/site/science/main.do/ [4]).

Policy design - Open data

Regulations on the management, etc. of National Research and Development Projects require that the head of the principal research institute or of the professional agency shall register or entrust research outcomes to an agency designated by the Science, ICT and Future Planning Minister, to ensure efficient management and distribution of each type of research outcome, such as papers, patents, and facilities and equipment (amended 14 May 2012, 23 March 2013).

NTIS has provided connection-servers to link the project management systems of professional organisations, and has supported education in connection technique and business rules, so as to adapt the national R&D information standard for use by these organisations. NTIS evaluates the quality of collected national R&D information annually, and awards the professional organisations involved for excellence. NTIS has annually invested the national R&D budget of about KRW 10 billion (for 2006-14, a total of KRW 90 billion).NTIS was formed and is operated concurrently with KISTI (http://en.kisti.re.kr/ [5]), KISTEP (www.kistep.re.kr/en/ [6]) and KBSI (http://old.kbsi.re.kr/english/ [7]) under the Ministry of Science, ICT and future Planning (MSIP).

The target population comprises industry and academic researchers, R&D programme management institutes, government policy makers, and anyone interested in S&T R&D activities.

Outcomes have included the cessation of duplicated investments in identical projects, and the effective management of R&D projects funded by the government.

While the S&T information of NTIS is basically open to the public, all of its content is protected under copyright law. There is no separate legislation for science data so far. Access to public sector information is regulated by the Act on Providing and Utilizing Public Data, enacted 31 October 2013. With regard to science data, NTIS is governed by the Framework Act on Science and Technology, amended in 2014. The following articles are related to open data:

- Article 5, Emphasis on Scientific and Technological Policies, and Acceleration of Science
- Article 6, Construction of Systems for Renovating National Science and Technology
- Article 16, Supports for Private Technological Development
- Article 18, Disclosure of Research and Development Outcomes
- Article 24, Security of National Research and Development Projects
- Article 26, Management and Distribution of Knowledge and Information of Science and Technology.

Policy design - Open/increasing access to scientific publications

Even though there is no formal policy for open access including what is termed public access so far, open access comes under the Act on providing and utilising public data and regulations on the management, etc. of national research and development projects (enforcement Date 26 September 2013).

Open Access Korea (OAK) is presented here as an example. Funded by MCST for five years (March 2009 to February 2014), Open Access Korea is the country's major OA initiative. The OAK project's total budget is KRW 4.3 billion for five years. The OAK project was initiated by KISTI and later transferred to the National Library of Korea. OAK journals target domestic researchers as well as overseas researchers. It is expected that this flagship initiative will enhance the openness of scholarly information through implementing open access to e-journals. OAK has adopted the Creative Commons Licence (CCL), in line with copyright law. The initiative does differentiate between free and *libre* open access. OAK journals have been *libre* OA by CCL since 2010, and the public has had free access to the 1 139 journals of Korean S&T societies since 1997.

Open science and international co-operation

The Sponsoring Consortium for Open Access Publishing in Particle Physics (SCOAP3) is a unique partnership [8] of thousands of libraries, key funding agencies and research centres in three dozen countries. Working with leading publishers, SCOAP3 has converted key journals [9] in the field of high-energy physics to open access at no cost to authors. The consortium pays publishers for the costs involved in providing open access, and the publishers in turn reduce subscription fees to all their customers, who can contribute to SCOAP3.

Korea, represented by the Korea Institute of Science and Technology Information [5] (KISTI), participated in SCOAP3 .

KISTI is leading the organisation of the local SCOAP3 consortium, in co-operation with the Korean university libraries and research institutes participating in KESLI (Korean Electronic Site Licence Initiatives) consortium.

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Links
[1] http://www.nl.go.kr/english/index.jsp
[2] http://synapse.koreamed.org/Overview.php#7/
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