

National Science & Technology Information Service

NTIS

Organisation: Ministry of Science, ICT and Future Planning

Country: Korea

Level of government: Central government

Sector: General public services

Type: Communication, Digital, Public Service

Launched in: 2003

Overall development time: 9 years 6 months

Link to the innovation's website

Description

This initiative is the world's first R&D knowledge portal that provides comprehensive information from the whole cycle of R&D, from the announcement to the evaluation. It collects users' opinions through various channels such as the webpage, mobile, and SNS. It provides G2G (promoting effectiveness of the R&D budget through real-time sharing of project information), G2B (providing cyber-mentoring service on using high-cost R&D equipment to SMEs) and G2C (providing real-time information through e-mail and SMS, including one-stop service for utilisation of R&D information) services.

NTIS also enables the construction of a governance system throughout the whole process from the planning to the execution and evaluation, adhering to international standards. The business process continues to be optimised to promote reliability at an international level.

Lastly, NTIS is a successful case for mediation of inter-ministry interests by the construction of a regular system for cooperation; it observed international standards for inter-operability between different systems, and setup standards and regulations for national R&D information to make the execution process effective.

Why the innovation was developed

- With the increased interest and budget spent on national R&D, an effective and transparent management system for national R&D projects was required. To that end, the Information Strategy Planning/Information Technology Architecture was performed in 2006. Based on this, the National Science & Technology Information Service (NTIS) has been built, which collects and serves all the R&D information dispersed throughout the different ministries and institutions.
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Objectives

Develop staff capacity, Improve effectiveness, Improve efficiency, Support economic growth

- Maximising the value of national science and technology through opening, sharing and collaboration of national R&D information.
 - Promoting the utilisation of high-cost R&D equipment by sharing, opening, and collaborating national R&D information throughout the different ministries.
 - Increasing effectiveness through minimising the administrative procedure required for accessing high-quality R&D information.
 - Promoting R&D effectiveness by providing the results of R&D such as papers and patent information to enable researchers to utilise the information for further research, technology transfer and commercialisation of the technology.
 - Contributing to prevention of redundant research being performed under different projects.
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Main beneficiaries

Academia, Businesses, Government bodies, Government staff

- More than 500 000 (researchers, scientists, students, company employees, R&D managers and evaluators, R&D policy makers, congressmen, news reporters, etc.).
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Existing similar practices

CORDIS (Community Research and Development Information Service)

In other countries' public administrations

European Commission

CORDIS is the European Commission's primary public repository and portal to disseminate information on all EU-funded research projects and their results in the broadest sense.

<http://cordis.europa.eu>

Results

Efficiency

- Saving of USD 532 million from 2005 to 2012 (through prevention of redundant projects and sharing of national R&D equipment).
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Service quality

Accessibility:

- Page views: 12.4 million (2011) → 23.3 million (2012) → 29.7 million (2013).

Reliability:

- DQC-M (Database Quality Certification-Management): validity level 3 (by Korea Database Agency).
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User satisfaction

- Increase in NTIS user satisfaction rate: 69.4% (2008) → 75.7% (2009) → 76.5% (2010) → 77.1% (2011) → 78.9% (2012) → 80.1% (2013).

Development

Design

In 2003, the National Science and Technology Committee decided to establish a system for monitoring R&D projects to promote transparency and comprehensiveness. An ISP was performed in 2005 before constructing the ITA (Information Technology Architecture) for NTIS in 2006. The service was developed and opened in 2008. Since 2008, an inter-ministry committee was formed for the operation of national R&D information connection system and future plans were made in 2010 for the enhancement of the service.

Design time: 1 year

Testing

- Development and operation of a project management prototype system.
- Utilisation of user opinion on improving the service through performing an annual user satisfactory survey.
- Operation of a NTIS monitoring group to monitor and test the service.

Testing time: 3 months

Implementation

Tools used:

- Based on the year plan designed by the central government, developers and managers made and improved the NTIS.
- NTIS upgraded by some consulting projects, software development projects, etc.
- Web services (Servlet, JSP, Semantic), Web DRM, cloud technology, and search engine were applied.

Resources used:

- Operation and development budget: about USD 10 million per year (for development, next-generation service consulting, website maintenance, etc.).
- Operation and development staff: about 60 staff in the NTIS centre (a part of Korea Institute of Science and Technology Information), which has a role of development and operation of the NTIS.

Implementation time: 2 years

Diffusion

- Checking of redundancy/similarity with other national R&D projects before applying for a new one and submit its result with the application.
- Sharing information of national R&D project with other output managing institutes through the API.
- Expansion of service information through connection with other science and technology information services such as NDSL.

Diffusion time: 6 years 3 months

Challenges and solutions

- NTIS needed to collect and process 330 items of national R&D standard information from the different ministries for service, which was a hard task.
 - As a solution to tackle this challenge, the following measures were adopted:
 - o Operation of inter-ministry committees to define the scope of the collection and service of information. Committees discuss and make decisions on the major issues concerning the project.
 - o Amendment of the "Regulation on the management of national R&D projects" through reflecting the opinions of the participating ministries for the effectiveness of collection of information and service process.
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Partnerships

Project Management Institutes

Other Public Sector

Partnership was formed with project management institutes under each ministry for the real-time connection and service of national R&D information. Annual operation plans are made and shared through this partnership and committees are formed to discuss and solve issues that occur during the operation of the service. Also, the collection rate and quality of information is measured for the enhancement of service quality.

Lessons Learned

Lessons Learned

- Cooperation with ministries and interconnection based on standards is very important to strengthen support for the integration of data from institutes under different ministries.
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Conditions for success

- Effective gathering of R&D information managed by different ministries.
 - Continual upgrading of system through which users can utilise the information.
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Other information

Awards

- 2008: Korea Software Technology Award.
- 2009: Korea Data Quality Management Award.
- 2010: Korea IT Innovation Award.
- 2010: Korea System Improvement Award.
- 2011: E-Asia award (by Asia Pacific Council for Trade Facilitation and Electronic Business).
- 2012: UN Public Service Award.

Certificates

- ISO20000 Certificate (2008 - present).
- ISO27001 Certificate (2009 - present).
- 2010: Data Auality Management Certificate.

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