A Case Study for R&D Strategic Planning and Decision Making for Using the Patents and Articles Database in KIST

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Abstract

The Korean governmental budget for research and development (R&D) in 2007 exceeded US$10 billion, as one of seven countries in the world. The point in time when other countries reach an R&D budget of US$10 billion is essentially when the paradigm for social and economic development changes and, accordingly, the overall demand for new technological development to meet the paradigm. In other words, innovative and value-creating technologies are highly demanded.

Since 2004, Korea has strengthened its R&D planning to satisfy the need for technology development; it is extensively applying this policy to government supported research institutes.

One of the representative government supported research institutes, KIST, has begun emphasizing preliminary R&D planning. It includes the analysis of world-wide technological trends, the identification of emerging technologies and latent competitors, and the establishment of strategies for global R&D cooperative networks. To obtain analysis results which are more objective, KIST is applying bibliometric methodologies, employing the patents and articles database, rather than the expert peer review method.

As a result, researchers can now submit R&D proposals based on the analysis result, and top management can utilize the data to verify the reasonability of the proposed research projects.

This study introduces concrete cases for the analysis of trends, networking, technology maturity, and citation analysis, based on the patents and articles analysis process for strategic R&D planning at KIST. Particular analytical methodologies, including patent and articles knowledge extraction, patent and article map analysis, technology clustering, technology networking, S&T database application, text mining with Vantagepoints, and ThemeScape productions of patents and articles, will be described. It will also analyze how researchers and top management are utilizing the analysis results for practical applications and significance of R&D planning and paradigm shift.

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