

# Can Digital Technology Open the Archives? – The Impact of “Japan Search”

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## Abstract

Keyword search dominates current user environments for finding information in the rapidly-growing digital domain. However, simple keyword combinations are often insufficient to express our search intentions. We desperately need a more sensible way to express the information for which we are searching. Therefore, we propose the “associative search,” in which a query comprises a collection of documents and a ranked collection of related documents is returned as the result. Full relevance feedback can naturally be realized by repeating the associative search after modifying the selection. Statistical metrics for measuring the distances among documents and words are defined, which provides a mathematically and computationally sound basis for association.

The data stored separately in archives, libraries, museums and other facilities for cultural memories are not interconnected and are usually isolated in independent silos. Associative search, which does not require the uniform structure of metadata, is especially useful for bridging these isolated silos of knowledge. We promote the research on information technology that enables the link between unified cultural information and memories or knowledge in broader areas.

We have created several services equipped with associative search, such as Webcat Plus, Cultural Heritage Online and Shinshomap. These are supported by IMAGINE technology, which dynamically coordinates these independent sources using associative search. IMAGINE provides a field of association in which the user can create the context for the information he or she wants, which then inspires each user in a unique way.

Our reading environment PONGEE is a variation of the IMAGINE interface. The displayed pages are automatically indexed with selected dictionaries or Wikipedia and the sidenotes are created dynamically. Some sidenotes are just the dictionary lookup but others are the results of associative search using the displayed pages as a query. We discuss the implications of using PONGEE for browsing various archived document types.

At the end of this talk, we will introduce a new country portal service called “Japan Search,” which will gather meta-data from various information sources across Japan, including the National Diet Library and National Archives of Japan. Its prototype has been in service since February 2019. We will discuss its possible impact.



## Biography

**Prof. Dr. Akihiko Takano** is a professor at the National Institute of Informatics (NII) in Japan. Prior to joining NII in 2001, he worked at research laboratories of Hitachi, Ltd. for more than 20 years. He holds a B.A. in Mathematics and Ph.D. in Computer Science, both from The University of Tokyo. Since 2002, he has been a professor at The University of Tokyo's Department of Computer Science. His research interests are functional programming, the informatics of association and digital archives.

Prof. Takano is enthusiastic about building associative information services based on the Generic Engine for Transposable Association (GETA/GETAssoc), such as Webcat Plus, Book Town Jimbou, Shinshomapp and IMAGINE Book Search. His team has been responsible for Japanese Cultural Heritage Online since its beginning in 2004. The team also leads the development of various digital archive systems such as NHK's Broadcasting Culture Archive, the Ad Museum Tokyo Advertising Archive and Japanese Animated Film Classics. Since 2017, he has been the chair of the working committee for Digital Archive Japan, supervised by the Intellectual Property Strategy Headquarters of Cabinet Office. His committee is responsible for "Japan Search," the new country portal for various digital archives in Japan.

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