

Chapter XXXIII

Patent and Trade Secret in Digital Libraries

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ABSTRACT

In this chapter, we discuss the issues on patent and trade secret issues on digital libraries, especially patentable parameter-setting components which are implemented as computer-related inventions in digital libraries. In addition, we discuss the directions for embedding and protecting numerical parametric information as a trade secret in the patentable parameter-setting components performing retrieval operations of digital libraries with the future of intellectual property protection in the multimedia digital libraries. The scope of this chapter is restricted within the current standard of the U.S. laws and cases in transnational transaction and licensing of intellectual properties regarding the digital library.

INTRODUCTION

In this chapter, we discuss the issues on patent and trade secret issues on digital libraries, especially patentable parameter-setting components which are implemented as computer-related inventions in digital libraries. Since the U.S. Supreme Court in *State Street* affirmed that processes or methods are patentable, subject matter such as computer-related programs and data-processing processes for retrieval operations in digital libraries are patentable in the forms of parameter-setting components. In addition, the current techniques in parameter-setting components enclose a variety

of numerical parametric information for proper retrieval operations which inventors recognize as precious know-how, and would like to cover as a trade secret.

The parameter information is often implemented in visual data processing for digital library operations. The parameter-setting components enclose a variety of numerical parametric information which inventors would like to cover as a trade secret. We discuss the directions for embedding and protecting numerical parametric information as a trade secret in the patentable parameter-setting components performing retrieval operations of digital libraries with the future of

intellectual property protection in the multimedia digital libraries.

The scope of this chapter is restricted within the current standard of the U.S. laws and cases in transnational transaction and licensing of intellectual properties regarding the digital library.

BACKGROUND

In this section, we discuss two issues on the intellectual property protection regarding digital libraries. The first issue is the patent protection of the retrieval mechanisms of digital library systems. The second issue is the trade secret on the numerical parametric values for retrieval operations in the parameter-setting components.

Patentable Parameter-Setting Components

The U.S. Patent Act (2005) defines that a data-processing process or method is patentable subject matter in the form of a computer-related invention (i.e., a computer program). The computer program is patentable as far as the “specific machine [...] produce[s] a useful, concrete, and tangible result [...] for transforming [...] physical data [“physical transformation”]” (In re Alappat, 1994).

The computer-related inventions often combine means for data-processing, some of which are prior disclosed inventions. Computer-related invention consists of a number of “processes” (i.e., methods or means for data processing in the form of combination of computer programs). In visual digital libraries, for example, a certain set of programs focuses on image processing, while another set of programs operates text mining. Meanwhile, in the same example, the processes in a data-processing mechanism comprise means or components for parameter-setting which is adjusted to process specific kinds of image retrieval operations (e.g., sorting proper images in certain object domains).

The problem of which process is to realize technical advancement (nonobviousness) on its combination of the prior arts, and is to be specific/enabling on its parameter-setting. These two issues are emerging problems in the advent of sophisticated data analysis technique, especially in the area of visual information retrieval in digital libraries. Uniform frameworks for protecting patentable inventions on the novel combination, and the specific parameter-setting must be formulated in engineering manner, respectively.

Trade Secret in Parameter-Settings

In the field of parameter-setting components, the DL community faces an issue that is how to protect the specific ranges of important numerical values regarding parameter-settings for performing proper and powerful retrieval operations in the form of a trade secret. Patent application on the parameter-setting components demands applicants as developers to make public the detailed know-how on the best range of parametric values in practice.

Meanwhile, the discovery of those parametric values needs considerable pecuniary investment in research and development. That kind of knowledge should be kept covered in the form of a trade secret, but not be open in public via patent application. It is necessary to prepare a scheme that determines how and which part of parameter-setting components should take the form of a trade secret, even in patentable parameter-setting components.

The problem is how to interpret the “working examples” of initial values or weights on parameter-setting and the ranges of parametric values in the DL engineering manner.

FRAMEWORKS

In this section, we outline the frameworks for intellectual property protection regarding digital

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