17 Valuing Software Intellectual Property

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Abstract: In this chapter, we discuss approaches used to value software intellectual property. We start by outlining current intellectual property valuation practices. Next, we outline a valuation framework that permits software experts to value all forms of intangible assets when involved in acquisitions, litigations, and disputes. The framework takes advantage of current theory and best practice to derive a fair value for use in valuing intellectual property utilizing the currently accepted cost, income, or market approaches. We conclude by focusing on the barriers that software experts will have to overcome when presenting their findings to non-software participants (executives, venture capitalists, judges, attorneys, juries, etc.).

Keywords: Valuation framework, real options theory, intellectual property valuation.

17.1 Introduction

As firms have used more and more information technology to run their businesses, valuing software and other forms of intellectual property has become more of an issue. That’s because such property represents large expenditures that may not be accurately represented in the company’s books (i.e., according to the American Institute of Certified Public Accountants (AICPA, 1998), software may have been expensed instead of capitalized and therefore appears as a liability instead of an asset on the firm’s income statement). For example, take a firm that has developed software that fuses customer satisfaction data together to provide executives with a true and accurate picture of how well their support processes are working in the field. Because this software helped the firm improve its level of customer satisfaction, it is viewed by management positively as a marketplace discriminator. However, the same software package may be viewed by the financial community as an unnecessary expense due to the fact that management has elected not to derive income by selling the software commercially because it provided them with a competitive advantage. Undoubtedly, management may want to value the software so that its true value appears on the books. They may also try to protect the intellectual aspects of this software using licenses, patents, copyrights, and trade secrets. Management’s goal is to keep the algorithms and other unique properties of this software out of the hands of their competitors.

As license, patent, copyright, and trade secret terms and conditions have been violated, attorneys have become involved in software litigation. While license breaches have proved relatively easy to value (ASB, 2002), determining the worth of patents, copyrights, and trade secrets has been much more difficult (Damiano,
Some of the many issues that make valuation difficult include, but are not limited to, the following:

- Traditional approaches to determine value focus on market price and do not include adequate allowances for appreciation of assets, market growth or technology, and functional, physical, and economic obsolescence (Cole et al., 2002).
- The “fair value,” “fair market value,” “market value,” “acquisition value,” or “use value” of an intangible asset is difficult to determine especially in light of current economic conditions. Fair value is defined as the amount in terms of dollars that a willing and able buyer would pay for these assets under current market conditions (Reilly and Schweis, 1998).
- Determination of value under the “highest and best use” principle is hard to determine as legal, physical, financial and maximum profitability conditions vary greatly depending on premises of value (e.g., value in place, value in exchange, value in continued use, etc.) (Reilly and Schweis, 1998).
- The range and profitability of the use of intangible assets are difficult to determine in light of future competition and market conditions (Mard, 2001).
- States treat valuation of intangible assets like software trade secrets differently and the case law is nonuniform (Loud and Reilly, 2000).
- Few cases involving valuing intangible assets like software trade secrets are available to establish precedence in a court of law (Goldenberg and Tenen, 2001).

In light of these issues, a framework is needed to help experts develop reasonable value estimates for software intangible assets, especially trade secrets. This framework needs to portray value in a manner that communicates the software’s true worth to the many communities trying to assess either the assets’ market potential or potential to the firm (e.g., for the case of the software that acts as a marketplace discriminator).

17.2 Software Intellectual Property Protection Mechanisms

The primary ways for owners to protect their software as intellectual property are copyrights, patents, and trade secrets. These safeguards are used to protect the software owner’s property rights relative to the ownership, transfer, and use of algorithms, data, designs, and processes used in the design, development, and production of software masters (i.e., configuration managed master copies of the software). Because software managers tend not to understand the advantages and disadvantages associated with the use of each of these protection approaches, we will briefly summarize them at this point in the chapter.