

# Assessment of Patent Legal Value by Regression and Back-Propagation Neural Network

Che, Hui-Chung, 賴以軒, Wang, Szu-Yi  
Technology Management  
Management  
franky@chu.edu.tw

## Abstract

This study aimed at the basis of patent law and proposed a revolutionary valuation model for the monetary legal value of patents. The damage award of a patent infringement lawsuit was deemed to be the legal value of a patent. 65 Effective samples were extracted from 4,289 patent infringement lawsuits retrieved in U.S. district courts of Delaware, California and Texas. 17 patent indicators were summarized to quantitatively describe dimensions of patents. The Multi-regression analysis was applied to discuss the linear relationship between the 17 patent indicators and the damage award. The Back-Propagation Neural Network was applied to construct the nonlinear valuation model of patent legal value, wherein the 17 patent indicators were the input variables and the damage award was the output variable. The proposed patent valuation model was validated to have the predictive power by error analysis. It accommodated to value the possible damage award or to negotiate the settlement fee for disputing patent infringement lawsuits.

Keyword : Patent, Damage award