

EXSYS Case Study

Tax and Legislative Auditing and Reporting

Langton Clarke



EXPERTAX enables users to diagnose and analyze tax-related matters, which are extraordinarily complex and dominated by few specialists. It is a major knowledge automation system in the business sector due to its size, complexity and detail of its knowledge base, application domain and functionality. Using this system, Langton Clarke distributes their highly specialized tax expertise to apprenticed auditors or to those with less experience in tax matters. The system develops a detailed work schedule, indicating to the auditor the steps he must take to perform a high standard audit. Use of the knowledge automation system enhances the quality of tax audits, increases productivity and gains new clients.

The EXPERTAX domain determines Net Taxable Income, Tax Equity, Taxable Income Found, Value Added Tax and Company Taxation, as well as special Tax Planning. Human expert interviews were transcribed verbatim, and analyzed to produce a reasoning object list and knowledge map. The knowledge automation system was developed using a continuous prototyping strategy through new interviews and adding enhancements to the system. Expertise was also acquired from expert-novice sessions.

The runtime version of EXPERTAX is being run on several machines. Interaction is made simple through menus that allow users to answer more than one response alternative. The system also enables the user to make a (What If) sensitivity analysis, modifies information from cases already dealt with, and examines the comparative effect in the knowledge automation system's conclusions. Cases defined by interaction (audits, comprehensive analysis such as planning, training new auditors, comparisons among companies, variances in fiscal years, etc.) are saved for later updates. The knowledge automation system alternatively issues a data and conclusions report that is incorporated into working papers, serves the auditor as a work guideline, and as a checklist for the supervisor or manager.