

AN EXPANDING EMPLOYEE BENEFIT

# Personal Financial Planning with Expert Systems

*Lower costs mean more employees can receive financial planning.*



Norma Nielson (c.) counsels employees about their retirement.

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**W**hen a provider of personal financial planning services uses an expert system to prepare plans, the cost per plan is substantially reduced and the quality of plans is more consistent. Because of the reduced cost and increased quality, an employer can consider providing comprehensive personal financial planning to many more employees than currently are receiving this benefit.

The increasing complexity and rate of change in the income tax laws, the relative increase in pension benefits and other forms of nonsalary compensation, the shift to cafeteria plans for employee benefits, and the increasing number of investment options available in the marketplace have contributed to companies' decisions to add personal finan-

cial planning as a benefit to employees. The dramatic reduction in the cost per employee for quality comprehensive personal financial plans, however, has undoubtedly been the deciding factor for many companies.

## PERSONAL FINANCIAL PLANNING

**P**ersonal financial planning includes insurance planning, retirement planning, investment planning, income tax planning, estate planning, cash management, and debt management and can include recommendations for choosing among nonsalary compensation options and employee benefit options. All aspects of personal financial planning are included in comprehensive plans. The personal financial planning benefit can include group education, individual counseling, comprehensive personal financial plans, or a combination of all three for a select group of employees or for all employees. The

benefit, for example, can be simple—providing a seminar for employees about the company's pension benefits—or it can be expanded to include individual counseling about options available upon retirement. An employee also may receive professional assistance in completing the data input form and in interpreting the plan and counseling regarding the recommendations.

A company may include personal financial planning when it shifts from the traditional preselected specific benefits for all employees to a set dollar amount for each employee, with each employee selecting the benefits desired from a group of options—what is called a flexible benefit or cafeteria plan. According to the Bureau of Labor Statistics, twice as many employees of medium- and large-sized companies were covered by cafeteria plans in 1988 as in 1986.

When a company changes to a cafeteria plan for employ-

ee benefits, the employees have greater responsibility for their own financial future. For example, when Monsanto Company instituted a cafeteria plan for its employees recently, it made a personal financial planning option available to nonunion employees to assist them in planning for their financial future. The benefit was provided because Monsanto believed it had shifted a portion of the responsibility for the employees' financial future to the employees and needed to provide them with additional tools to assist them in planning their own financial future. Monsanto employees can have a comprehensive plan or can elect to have a specialized plan, such as a retirement plan, prepared. Over time, as employees implement the suggestions and recommendations contained in their personal financial plans, the employees' choices from the available benefit options are apt to change.

### WHO PROVIDES THE SERVICE?

**A** comprehensive personal financial plan starts with the collection and analysis of personal and financial information. A comprehensive plan considers all aspects of an individual's personal finances including assets, liabilities, sources of revenue and expenditures, pension benefits, insurance coverage, the goals and desires of the employee, and the person's attitudes toward risk. Because no two people have the same financial position, sources of revenue, spending habits, goals and desires, and risk attitudes, each personal financial plan must be tailored to the individual. Personal financial planning is an individualized ongoing process requiring constant updating to incorporate changes in the environment as well as changes in the individual's life, goals, family status, and financial situation.

Personal financial planning services are provided to the public by certified financial planners (CFP), chartered financial consultants (ChFC), and SEC-registered investment advisors (RIA). In addition, depending on the nature of their practice and experience, some certified public accountants, chartered life underwriters, attorneys, and others with substantial training and experience in the field also may provide personal financial planning advice. A personal financial planner must be knowledgeable about pensions, insurance, investments, asset valuations, and debt management, as well as have an understanding about the laws concerning income and estate taxes, property ownership, divorce, wills, estates, and trusts. A good personal financial plan prepared by a qualified planner can cost \$200 to \$20,000 or more, depending on its completeness, the number of hours of personal assistance provided by the professional preparer, and the method used to prepare it.

When personal financial plans are prepared using expert systems, companies can provide the planning benefit to employees at a reasonable cost. An expert-system-prepared comprehensive personal financial plan costs from \$200 to \$500, and the results are consistent and generally free from product bias. If employees receive individual assistance either in the preparation of data or interpretation

of the plan or its recommendations, the cost will range from \$500 to \$2,000 per employee.

### TYPES OF SYSTEMS

**P**ersonal financial planning expert systems are classified either as integrated systems that provide solutions to all aspects of planning or as specialized systems that focus on a smaller area such as income tax planning. Developers of expert systems for comprehensive personal financial planning use four basic approaches: a custom expert system, a custom modification of an existing

expert system, the purchase or license of an expert system for in-house use, and developer-provided personal financial plans. The best approach for a particular company depends upon the number of plans to be prepared, the expertise and staff of the organization in both expert systems and personal financial planning, and whether or not the company wants to provide the service in-house or hire an outside entity to provide the service.

If a company prepares a large number of personal financial plans, using a proprietary customized expert system may be most cost-effective although such a system is expensive to develop. The development requires experts in both computer programming and personal financial planning and can take two or three years. In addition, the company constantly must update the knowledge bases used in analyzing the individual's information, for changes in income tax laws, insurance and investment products,

and the environment.

A company may modify an existing personal financial planning expert system to include its own benefit plans and compensation packages. A company also can purchase or license a system for in-house use, with periodic updates provided by the developer, and prepare the plans itself. For these alternatives, corporate managers must consider whether it is appropriate for the company to have personal and confidential employee information, which employees may be very reluctant to provide their employer.

Finally, a company may decide to enter into a contract for employees' personal financial planning with the expert system developer and provider of services. The information for the plans is entered on forms prepared by the employees and mailed to the operator of the expert system. For most companies, contracting with a personal financial planning expert system developer who is also a provider of the planning service is the most likely choice. If a company uses an outside entity, the company has not become the personal financial planning expert with the inherent risks of providing incorrect or unprofitable suggestions or the invasion of employees' privacy.

### SELECTING AN EXPERT SYSTEM

**W**hich personal financial planning expert system preparer a company chooses depends on how a company views providing personal financial planning ser-



Carol Brown (l.) with student.

vices for its employees, its assessment of the confidentiality of employees' information, and the associated legal liability. The selection criteria for a personal financial planning expert system can be divided into the following categories: reliability of the system, form of data input, flexibility of the system, understandability of the output, and potential liability for results. If a company decides to use an outside provider, competition assures that the cost per plan will vary little among providers.

**Reliability of the System.** If the expert system truly represents personal financial planning expertise, then reports generated by the expert system should be at least as high in quality as those created by a qualified personal financial planner who did not use an expert system. A company can take one of two approaches to determine the expertise of a developer: one is to rely on the professional reputation of the preparer and the other is to test the product. Simply reviewing sample reports will not provide sufficient information to make an informed decision or constitute due diligence in the selection of a provider.

If a company relies solely on the professional reputation of the provider of the planning service, the company should require the provider to agree to indemnify the company for any reasonable potential liability. In addition, the company should make sure the provider has the financial resources to cover the indemnification agreement.

To test the product, the company should evaluate carefully the results produced from running test cases. The person evaluating the results of the test cases must be qualified to determine the quality of the reports. If the company does not have a qualified employee, it will need the services of an outside professional planner, although having one financial planning professional evaluate an expert system used by other planners in providing the same service can lead to conflict.

The advantages of using a personal financial planning expert system will disappear rapidly unless the system's knowledge base is updated constantly by the developer. The pace of new product introductions by financial institutions and the frequency of modifications to the Internal Revenue Code make such updates crucial. If the system developer is stable, financially sound, and committed to the product, the company can be reasonably certain the expert system will be updated over the foreseeable future, thus providing the best possible personal financial plans for its employees.

**Form of Data Input.** The preparation of personal financial plans requires information about the company's benefit plans and compensation arrangements and other details about each employee's financial and personal situation including his or her financial goals and risk attitudes. The tools for gathering needed data and the methods of providing the information are important considerations when choosing a provider of personal financial planning services for employees. The information required may simply be entered on a form provided to the employees. A provider may gather the required information through individual meet-

ings with employees and prepare the forms. Because the quality of plans is directly dependent on the quality of the information provided, input forms that are well organized, readable, understandable, and user friendly are vital when employees prepare their own information.

A form that assists employees in determining the sources of information and the values to use is superior to one that does not. The input form can be customized to match the company's benefit reports. For example, the form may refer the employees to a particular line on the company's benefit statement for a needed item. The provider of the personal financial planning service may provide assistance via a toll-free number or through personal counseling, either on an individual basis and/or through seminars and group help sessions. Some of the expert systems store employee data so that employees only need to update previous information once the first personal financial plans have been prepared.

**Flexibility of the System.** Flexibility in an expert system means it can:

- Provide only a part of a comprehensive plan, such as cash management or income tax planning (modularization);
- Modify its inherent assumptions such as the rate of inflation anticipated (parameterization);
- Modify the recommendations and determine the effects ("what if" analysis).

Not all employees will be interested in or want a comprehensive personal financial plan. For example, some employees may be interested only in retirement planning and may not

want cash and debt management, or they may not want to reveal certain aspects of their financial and personal situation.

Some employees may prefer planning strategies or types of investments that are not typical of the recommendations of the expert system. An expert system that can incorporate an employee's preferences is better than one that will not as an employee will not follow a plan that differs widely from his or her preferred choices.

Some employees may have strong beliefs about the future economic environment, such as expecting the rate of inflation to remain above 5% for the foreseeable future, a view that conflicts with the 2% inflation factor used in the expert system's recommendations. In such a case, the expert system should permit the employee's views to be included, although if an employee's perceptions are out of normal bounds, they would have to be overridden by the system. An expert system that permits the setting of parameters to reflect the reasonable preferences and beliefs of individual employees is likely to provide more usable plans than a system that does not.

In planning for the future, employees may have questions such as "What if I purchased shares of a mutual bond fund rather than individual corporate bonds?" If the expert system can compare the effects of various alternatives, it will provide the maximum benefit to employees in planning for the future. The price per employee of a personal financial plan will affect the amount of "what if" sensitivity anal-



Mary Ellen Phillips explains financial planning.

## TABLE 1\INTEGRATED PERSONAL PLANNING EXPERT SYSTEMS

### AAFINPLAN

All income ranges, in use since 1989. Wallace Head, Arthur Andersen & Co., 69 West Washington St., Chicago, IL 60602. Phone: (312) 507-7236.

### AYCO

Incomes over \$60,000, in use since 1983. Linda Kempin, The Ayco Corporation, One Wall Street, Albany, NY 12205. Phone: (518) 869-2503.

### CLIENT PROFILING SYSTEM

Incomes between \$25,000 and \$200,000, in use since 1987. Tyrone Mowatt, APEX, Applied Expert Systems, Five Cambridge Center, Cambridge, MA 02142. Phone: (617) 492-7322.

### OBJECTIVE FINANCIAL SYSTEM

Incomes over \$50,000, in use since 1987. Bruce Niswander, Objective Financial Systems, 245 West Cooke Rd., Columbus, OH, 43214. Phone: (614) 262-3171.

### PERSONAL FINANCIAL ANALYSIS

All income ranges, in use since 1987. George Barbee, Executive Director of Personal Financial Services, Price Waterhouse, 51 Sawyer Road, Waltham, MA 02154. Phone: (617) 899-6500.

### PFPS

(Personal Financial Planning System)

Incomes between \$25,000 and \$500,000, in use since 1987. Ross S. Cann, Chase Lincoln First Bank, MC-5, Rochester, NY 14643. Phone: (716) 258-6708.

### PLANMAN

All income ranges, in use since 1983 in the United States; in the United Kingdom and New Zealand since 1987. Daniel L. Whittenburg, Sterling Wentworth Corporation, 57 West 200 South, Suite 510, Salt Lake City, UT 84101. Phone: (800) 752-6637.

ysis provided. A plan must provide the alternatives employees feel are important, or it will not be implemented.

**Understandability of the Output.** The planning horizon and the format, length, and readability of the reports are important considerations. The company is paying a substantial sum for the personal financial planning service for its employees, and the only tangible evidence of that service is the report. If the employees do not understand the report, they have wasted the time spent in providing the information, and the company has not spent its benefit dollars wisely. Personal financial plans are just plans—the benefit to the employees comes from executing the suggestions provided by the plans. If a company selects an expert system that generates a lengthy and complex report, the company must be willing to pay for the planner's interpretation of the plans for the employees.

**Potential Liability for the Plans.** The company that has selected the provider of the personal financial planning service and is either paying the cost of the service or reimbursing the employee for the cost may have some potential liability for the resulting plans. This liability can be mitigated if the expert system is selected with due diligence, which includes determining the quality and completeness of the service and the lack of product bias.

By evaluating the expert system and the reputation of the provider, an employer can determine that the personal fi-

nancial planning services provided to employees are of high quality. If the plan provided is limited to just one area, such as retirement planning, the company must make sure the employees know of the limitation. If the company is sponsoring comprehensive personal financial plans, the plans must cover all the planning areas and not emphasize one area and ignore or slight another.

The company must ascertain that the personal financial planning service it has selected is not promoting or selling a product, which might make its recommendations biased. Some companies may require the provider of the service to provide limited indemnification for potential losses, such as illegal activities on the part of the planner.

## SOME PERSONAL FINANCIAL PLANNING EXPERT SYSTEMS

Only personal financial planning expert systems that provide solutions to all aspects of financial planning (comprehensive systems) are discussed here, together with the major features that differentiate the systems. Specialized systems with a narrow focus, such as tax planning, have been omitted. All seven systems discussed may not be capable of providing services to companies with a large number of employees. The reference list (see Table 1) provides the targeted income levels, time in use, and developer's name, address, and phone number.

**Ayco Corporation.** In 1983, the Ayco Corporation upgraded the computer system begun two years earlier to an expert system. Ayco provides personal financial planning services on a fee basis to the top executives of Fortune 500 companies. It specializes in analyzing very complex personal financial situations with as many as 100,000 recorded data items used in preparing a single client's plan and produces reports that average 60 to 80 pages. The Ayco Corporation's database-driven financial planning expert system is an integral part of its practice. Personal financial plans prepared by the expert system are not marketed separately but are always prepared by planning professionals assisted by the expert system.

For top executives with incomes of \$100,000 or more, the cost for a first-year plan averages \$13,000, with subsequent years costing approximately 60% of the initial year's fee. Ayco also offers a service for middle managers with incomes of \$60,000 to \$75,000 that is less extensive and costs approximately \$4,500 for the first year.

**Client Profiling System.** The Client Profiling System for financial institutions was in use by 1987. Currently, six major financial institutions are using the system, including firms both inside and outside the United States. Depending on the volume of personal financial plans prepared, the production system can be licensed for \$100,000 or more. Client Profiling is intended for middle-income customers. The system uses a client questionnaire that can be prepared with the assistance of the financial institution representative or by the employee. The questionnaire requires financial data and focuses on the customer's goals. The system generates a 15- to 20-page client report. In 1989, APEX began offering the system on a per-use fee basis to individual personal financial planners.

**Objective Financial System.** Objective Financial System has been commercially available for three years. Minicomputer based, Objective Financial System links to other systems that track market and rate-of-return trends and integrates that information into its analysis and recommendations. The system uses client profile information as well as financial information in preparing its report.



Modeling is based on available funds and available investments. The system produces either a comprehensive financial plan or separate modules addressing retirement planning, education funding, debt management, insurance and risk management, life insurance planning, estate planning, dwelling management, cash flow and budgeting, and investments. The final report is produced using a computer-controlled word processor. Objective Financial System is marketed on a per-use basis primarily through banks, savings and loans, and credit unions.

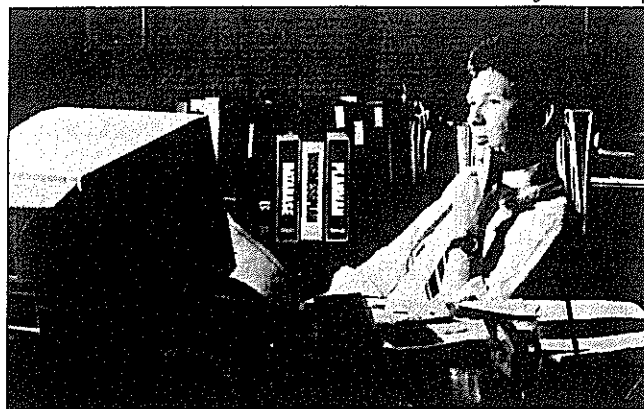
**Personal Financial Analysis.** Personal Financial Analysis is a package of services available to companies that are clients of Price Waterhouse. Client companies purchase the service to provide financial guidance to their employees. The three-part package tailors results to the client company's benefit plans. First, the employees fill out a confidential questionnaire focusing on their economic and family situation: income, taxes, investments, employee benefits, marital status, number of dependents, and any special financial goals such as financing retirement or children's education. The questionnaire serves as the basis for a 40- to 50-page report that provides suggestions for asset management, investment strategies, tax-saving strategies, planning for education savings, life insurance needs, and retirement savings. The report, prepared using a combination of human analysis and expert systems, includes financial action checklists to help employees implement their plans. The personal financial plan is cross-referenced to a 350-page volume of planning information to help employees in implementing the recommendations.

**PFPS (Personal Financial Planning System).** PFPS, in use since 1987 by Chase Lincoln First Bank, is an integrated personal financial planning expert system. The system was developed more than six years ago by Chase in conjunction with the international consulting firm, Arthur D. Little, Inc. PFPS is an integrated system covering investment planning, debt planning, retirement planning, education planning, life insurance planning, budget recommendations, income tax planning, and savings for other major financial goals. PFPS can be programmed to handle the details of a specific company's benefit programs, including stock options and deferred compensation plans.

The system provides detailed reports of 75 to 150 pages for employees with all ranges of income. Reports are provided to clients on a fee basis with fees as low as \$300. Chase now is marketing the system to certified financial planners, other banks, and companies for use in providing an employee benefit.

**PLANMAN.** PLANMAN is a PC-based personal financial planning expert system developed by Sterling Wentworth Corporation for use by professional financial planners. Quantitative and qualitative personal data about the planner's client are collected on preprinted fact finders. The client information is checked and analyzed by more than 7,500 decision rules in the system. The system generates comprehensive or modular plans with an option to create a pro forma report. The use of planning parameters allows the system to base conclusions and recommendations on the individual planner's philosophy as well as client-specific data. The client-specific conclusions and recommendations are used to select appropriate paragraphs of information, which are merged into a customized report. With the pro forma option, the financial planner can use the system to project the long-term impact of the system's recommendations on the financial condition of the client and to do "what if" analysis. PLANMAN includes these modules: in-

Sterling Wentworth Corp.



PLANMAN incorporates users' recommendations.

come tax and cash flow, investment and portfolio, life insurance, disability income, retirement, education funding, and estate. The user can use one or a combination of these modules or the entire expert system. The system provides the financial planner with extensive report writing and graphics capabilities. PLANMAN has been in use for several years, and recommendations of users for improvements have been incorporated continuously.

**AAFINPLAN.** AAFINPLAN is a modified version of PLANMAN that Arthur Andersen & Co. has developed with Sterling Wentworth Corporation. The knowledge base received minor modifications, and the text of the recommendations was modified extensively. Arthur Andersen's approach is to include consultation with its personal financial planning professionals along with the expert-system-produced plan. AAFINPLAN is available to companies that are clients of Arthur Andersen in a package of services similar to that described above for Personal Financial Analysis.

As seen from the variety of expert systems described above, companies have a wide choice if they decide to provide personal financial planning for their employees. More and more companies are doing so as benefit dollars become scarcer and personal financial planning becomes more complex. As companies attempt to limit the cost of benefits, the providers of personal financial planning services will rely increasingly on expert systems technology to provide consistent and cost-effective advice. ■

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