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# Planners Demand More from Retirement Planning Software

by Ed McCarthy, CFP®

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Retirement planning requires a blend of art and science. The art involves the planner's skills and judgment, while the science takes the form of quantitative assumptions and numerical projections. Those skills have evolved as planners have gained experience in recent decades; additionally, the progression of baby boomers toward their golden years has spurred research into the finances of retirement. That research has also influenced the science of planning—Monte Carlo simulations, for example, are now used regularly in projections.

Much of the evolution in retirement planning is incremental: tax laws change, new retirement plan options become available, and so on. In response, the preferred strategies and recommendations to clients change. Occasionally, however, fresh insights into retirement planning appear and gain widespread acceptance, and the resulting paradigm shift calls for new skills and revised analytic tools. This article examines how several of these recent insights are changing the way planners and software developers model retirement cash flows and advise clients on their best course of action.

## Linear Thinking, Linear Programs

The early models and software, circa the 1980s and early 1990s, relied heavily on straightforward time-value-of-money calculations. Clients' retirement expenses were inflated at a projected rate for the duration of their life expectancies. Some income sources like Social Security were adjusted for inflation, while other incomes remained constant. The models assumed that investment returns would hold constant for the plan's horizon. Any gap between income and expenses was discounted to the start of retirement, and the planner would then recommend corrective actions to cover the projected shortage of funds. Because these projected expenses often grew to large amounts, clients frequently faced funding deficits. Planning software generated color-coded bar charts that illustrated continually increasing expenses over the client's retirement. The software could also generate illustrations showing how the advisor's recommendations would prevent or reduce the shortfall.

This model served an important purpose apart from its value as a sales tool. It helped move planning away from the yellow-pad approach by using more transparent quantitative forecasting methods. It also provided a wake-up call to clients and the news media by demonstrating that many people risked a significant retirement savings shortfall. From that perspective, this linear model benefited many clients by prompting them to recognize the under-funding risk. The model had several flaws, however, and subsequent research exposed its limitations.

## Notable Shifts in the Paradigm

Several articles that appeared in this journal during the 1990s began to move planners away from the linear model. H. Lynn Hopewell, CFP®, wrote about the need to recognize volatility in key planning assumptions such as rates of return. He used Monte Carlo simulations to develop forecasts that permitted planners to educate clients about the uncertainty in their projections. William P. Bengen, CFP®, published a series of articles on safe withdrawal rates and the relationship between retirement portfolio allocations and portfolio longevity. Another article, which was published in 1999, had significant consequences for cash-flow modeling. Kenn Tacchino, J.D., and Cynthia Saltzman, Ph.D., reviewed how different-age cohorts spent money, and their findings challenged the notion that retirees' spending increases uniformly throughout their lives.

These articles influenced the way planners think about retirement and the software they use. Monte Carlo simulations are now readily available in professional and consumer programs. The concept of a safe

withdrawal rate in the 4–5 percent range is accepted as a rule of thumb. The assumption of constantly increasing retirement spending has been replaced by a recognition of age-related phases with distinct spending patterns and a subsequent increase in cash-flow modeling flexibility.

Two recent articles in this journal are also influencing planners' thinking and their software requirements. Jonathan T. Guyton, CFP®, principal with Cornerstone Wealth Advisors Inc. in Edina, Minnesota, extended the research into safe withdrawal rates, and his proposed decision rules for withdrawals, published in October 2004, attracted widespread interest. Ty Bernicke, CFP®, principal with Bernicke & Associates Ltd. in Eau Claire, Wisconsin, revisited retirement spending patterns in a June 2005 article. Although he was unaware of Tacchino and Saltzman's work until his article was nearly completed, Bernicke's "reality retirement planning" model similarly challenged the idea of inflation-adjusted spending. This article considers how these recent shifts in the retirement planning paradigm are influencing planners' demands on their software.

## Living by the Rules

It would be an understatement to say that Guyton's article, "Decision Rules and Portfolio Management for Retirees: Is the 'Safe' Initial Withdrawal Rate Too Safe?" struck a chord with readers. After the article appeared in [October 2004](#), leading personal finance publications reported the article's findings, Guyton was invited to speak at numerous conferences, and readers are still contacting him more than a year after publication.

Guyton's research focused on determining the maximum safe initial withdrawal rate. His definition of "safe" included

- | Avoiding decreases in portfolio withdrawals versus the previous year
- | Allowing for systematic withdrawal increases to keep pace with inflation
- | Maintaining the portfolio for at least 40 years

Guyton implemented a set of decision rules to govern withdrawals and portfolio rebalancing decisions. For example, the rule regarding withdrawals from equity assets stated: "No withdrawals were taken from an equity asset class following a year in which it had a negative return, so long as cash or fixed-income assets were sufficient to fund the withdrawal required."

Guyton tested the rules for the years 1973 to 2003, a period that included two bear markets and several years of unusually high inflation. His findings: the rules allowed a maximum safe initial withdrawal rate as high as 5.8 percent to 6.2 percent, depending on the portfolio's equity exposure.

The decision rules provided a methodology, but Guyton lacked software that could implement the rules without manual input and control. Prior to his research, he used Microsoft Excel worksheets for full-blown planning analyses and Frontier Analytic's Allocation Master for portfolio analysis. Presently, however, he does not use planning software with existing clients to determine if their retirement plans are on track because he finds the available software lacks a critical feature.

"As planners, we try to create scenarios where the assumptions reflect the way retirement life really works or is most likely to work," Guyton says. "In real life, if we see clouds on the horizon at some future point—and we will—then we advise clients to do things that can increase their financial security, like freezing withdrawals or cutting spending. But planning software doesn't have the dynamic capability where planners can plug in their own policies or decision rules that they know they would take into account when advising clients."

Guyton points to Monte Carlo simulations to demonstrate the lack of "mid-course corrections" that concerns him with current programs. "Imagine that we have a client with a 5 percent withdrawal rate," he says. "You put that information into a simulation and it turns out that income stream has an 80 to 85 percent chance of success. But Monte Carlo simulation assumes that once you start that withdrawal stream, there is never a mid-course correction of any kind. In other words, the simulators don't give us any artificial intelligence. They are not dynamic in the sense that they can manipulate the scenario when certain thresholds or warning signs show up. For example, it would be very useful if there was a software input that allowed the planner to freeze the client's withdrawals if the planned withdrawal rate was to go

above X percent in any given year."

## Spending Less

Ty Bernicke's research was also based on an observation that the available software models did not reflect retirement accurately. His father, an experienced planner, had observed that his older clients spent less each year, even after accounting for inflation. Bernicke wondered if this pattern was unique to their practice or if it was a widespread occurrence, so he began investigating the available statistics on age-related spending. Data from the U.S. Bureau of Labor's Consumer Expenditure Survey confirmed the anecdotal evidence: Although some categories such as health-care spending rose, overall household expenditures declined as retirees aged. Bernicke's conclusion: Under traditional retirement planning, consumers tend to oversave for retirement, underspend in their early years of retirement, or postpone retirement.

"When I wrote the article, my intention was to help raise awareness that we might not be doing retirement planning as accurately as we could," Bernicke says. "There has never been a study that suggests a retired person's spending goes up at the same pace as inflation, so maybe we should reconsider how people actually spend. The data I used were the best we had available. In my opinion, if we want to get more sophisticated with our planning strategies, we should consider using software that allows us to address spending on a category-by-category basis. This would allow planners to decrease spending in categories such as transportation and entertainment, while the health-care category could be accelerated at a pace greater than the assumed inflation rate."

Bernicke used a commercial program for the illustrations in his article but experienced difficulty getting the program to produce the results he was seeking. He is presently evaluating several programs for his practice, but the trade-offs he's finding have made the selection difficult. Programs that are easy to use lack the modeling flexibility he needs, for example. Others have sophisticated analytics but are complex to operate and require extensive training.

Bernicke's comments summarize the challenge facing retirement planning software developers. Some advisors want modeling flexibility, but it's not always possible to have both flexibility and ease of use to the degree that each user wants. Other advisors, particularly those doing goals-based planning for clients with uncomplicated finances, want fast inputs and graphical analyses that clients will understand without detailed explanations.

## Commercial Efforts

Developers take comments like Bernicke's and those from other users seriously. Winnipeg, Canada-based EISI, makers of NaviPlan, has user groups in the United States and Canada as well as a NaviPlan steering committee comprising the company's largest clients. According to Dr. Linda Strachan, CFP®, vice president for product marketing, EISI representatives have a conference call every month with the U.S. group, and these users help the company prioritize desired features in each new NaviPlan release. Money Tree Software, which is located in Corvallis, Oregon, also consults regularly with its customers. The company has an advisory panel of approximately 120 customers who provide feedback on the programs; other users also offer suggestions for improvements.

User requests for modeling flexibility have driven many of the recent changes in both companies' programs. Mark Snodgrass, president of Money Tree and author of the Monte Carlo Simulation systems used in all Money Tree programs, reports that the company's Total Planning system now provides year-by-year flexibility for almost 1,250 variables used in the analysis. For example, planners can illustrate part-time income for clients who transition from full-time employment, and users have extensive control over clients' expenses as well. Strachan says that NaviPlan version 10.0 allows users to enter as many expenses as desired and have each expense start and stop at specified times. "We hear a lot about the go-go, slow-go, and no-go phases in retirement," she says. "Version 10.0 recognizes that retirees aren't always spending the same amount of money; the program also differentiates between fixed expenses and discretionary expenses."

## Going It Alone

Even if a developer lacks a formal user-feedback structure like those found at EISI and Money Tree, no software company can afford to overlook users' requirements for long. But several planners interviewed for this article have been unable to get what they need from the commercial programs and have decided to build their own retirement planning software.

J. Peter Doyle, CFP®, CPA/PFS, owner of Doyle Financial Advisory Services in Fox River Grove, Illinois, is an example of a sole practitioner who has shifted from commercial programs to customized Microsoft Excel worksheets for his client analyses. Doyle "didn't want to reinvent the wheel" when he started his practice in 2000, so he reviewed the commercial packages extensively. He selected one and used it for 2 1/2 years, but he grew frustrated with the software's analytical limitations. "I couldn't explain the methodology behind some of the projections and reports," he says. "That bothered me and several clients as well, but I was too busy at the time to examine other programs."

Doyle worked as a controller for a Fortune 500 company before starting his planning practice. He became proficient with Excel during those years, and had developed a library of specific-purpose spreadsheets to supplement the commercial software. His disenchantment with the commercial software came to a head in 2003 when he faced a client deadline after upgrading to a new version of the software. The program stopped working on his computer and calls to the company's tech support staff failed to solve the problem. There was no time to change programs, so Doyle decided to expand ad hoc Excel worksheets he had built into an integrated set of financial planning modules. "It took an initial four days of solid work," he says. "Over time it's been a matter of tweaking, and I have maybe 150 hours total in the software, which is in its fourth or fifth generation. I've also added other features such as graphic output and report-writing."

Doyle agrees that his years of corporate experience with Excel were a significant advantage in developing the spreadsheets. He keeps a list of features that he wants to add and bugs that need correcting, but he views the time spent as adding value to his work with clients. He cautions other advisors about going the same route, however. "You must enjoy tinkering with Excel or Lotus or whatever spreadsheet package you use," he says. "You also need to be comfortable with the analytical details. I think it takes a certain mentality; as a CPA I'm trained to be detail-oriented and that gives me an advantage."

At Vector Financial Network (VFN) in Minneapolis, Minnesota, the motivation for developing customized Excel worksheets came from observing clients' behavior. According to Michael Ricci, a principal with the firm, clients had a tendency to view their assets as "one big pile" and this led to problems when planning with couples. One spouse often wanted risk-free investments to ensure the income would be there when needed. In contrast, the other spouse would claim that staying ahead of inflation required growth and that meant exposure to equities.

VFN's response was to segment the money into multiple portfolios, with each portfolio's investments matched to a specific time horizon. An assured income portfolio, for instance, is invested fully in bonds to provide guaranteed income for a period of four to six years. The preservation portfolio might hold 50 percent bonds and 50 percent equities and is designed to replace the assured income portfolio. An accumulation portfolio holds a higher percentage of equities and will be used for income in 12 to 18 years. By matching multiple portfolios on a timeline with anticipated income needs, Ricci says, the clients stop seeing their assets as one aggregated pool of retirement wealth.

In 1996, Thomas Fee, VFN's founder, started developing Excel worksheets that incorporated the firm's multi-portfolio, cash-flow-matching approach. Fee had experience developing retirement planning software, and the worksheets evolved into a customized package now called PensionTRAC<sup>a</sup>. The software allows the advisor to establish the risk associated with each portfolio basket and handles portfolio rebalancing. Ricci says that the software provides a marketing benefit, as well, and it has led to referrals from existing clients.

Doyle's worksheets and PensionTRAC are proprietary systems. In other cases, though, planners have developed retirement planning programs for themselves and other users. Briggs Matsko, CFP®, a planner with Lincoln Financial Advisors in Sacramento, California, had used several different programs with clients, but the programs lacked the flexibility needed to create multiple scenarios with clients. Additionally, Matsko was developing an approach to retirement planning called the "Retirement Income Matrix," which was designed to be used interactively with clients, and which incorporated multiple goals and income sources, and distinguished between "core" and "joy" expenditures.

Matsko wanted software that provided the analyses and output to support the matrix, and a meeting with Jon Boscia, Lincoln's CEO, led to a joint development effort. Matsko teamed with Jason Glazier, Lincoln's chief technology officer, and they developed a framework for a program that included Matsko's desired features. Lincoln hired a programmer to implement that framework, and the resulting software is now being field-tested by a control group of 150 Lincoln-affiliated planners. Once the testing is completed, the software will be made available to all of Lincoln's representatives.

Ty Bernicke and Jonathan Guyton are also considering the prospect of developing their own retirement planning software. If Bernicke can't find a commercial program that permits the flexibility in spending patterns he desires, he says he might develop Excel worksheets, assuming he and his staff can find the time to manage the project. Guyton recently teamed with a university professor to build software that tested his decision rules within a Monte Carlo simulation. The results of those tests are published in this issue (p. 48), and he is considering the prospect of working with a commercial software company.

"We hope to find one or two software companies in 2006 that would work with us to incorporate these decision rules into their software," Guyton says. "That would allow planners to test the rules for themselves and show clients the implications that the rules might have on the probability of success. We think that will be tremendously helpful to planners and clients."

## The Client Side

Financial planners and the software companies that serve them aren't the only parties tracking shifts in the retirement planning paradigm, of course. As the early baby boomers reach retirement age, their retirement plan assets will be an increasingly important focus of the financial services industry. Given boomers' dislike of sales pressure and their desire to control their retirement finances, those companies that give boomers the tools they want will be well positioned to capture their business.

Fidelity Investments' Retirement Income Planner (RIP) is an example of flexible retirement planning software developed for investors. The application tells users how well they have met the five key retirement planning risks that Fidelity has identified:

1. Longevity
2. Inflation
3. Asset allocation
4. Health care expenses
5. Withdrawal rate

This writer recently attended a guided demonstration of RIP, and my initial impression was that the program does a good job of assessing the adequacy of the investor's exposure to the key risks. The Web-based software permits detailed, time-varying inputs of income and expenses, and the asset inputs can handle a range of asset types. Additionally, RIP links automatically to Fidelity accounts, and users have the option of having Yodlee account aggregation software pull in non-Fidelity accounts. After generating the analysis, users can choose from several what-if scenarios that consider changes such as taking a part-time job after retirement, saving more, or changing an asset allocation. Fidelity has not released a version of RIP for advisors, but the company is considering that option.

Another notable aspect of RIP is its link with Fidelity Brokerage Services Income Management Account (IMA). RIP provides the retirement plan and the IMA provides the technology and services to monitor the plan and manage distributions and cash flow in retirement. Investors can compare the amount they take in and spend with their retirement plan, aggregate Fidelity and non-Fidelity accounts, and coordinate multiple sources of income—pensions, Social Security, investments—from one account. In addition, IMA clients can pay bills and handle other cash-management chores through the account. In this writer's opinion, RIP and IMA demonstrate the potential integration of analytics, services, and products that many boomer-clients will expect from their financial advisors.

## Looking Ahead

We asked the sources from EISI and Money Tree how they envision the evolution of retirement planning

software in the near future. EISI's Linda Strachan says retirement distribution planning will continue to grow in importance. She notes that several financial services organizations have recently approached EISI to express their interest in distribution-planning software for their organizations. Money Tree's Mark Snodgrass believes that the availability of increased computational power to advisors and Money Tree's developers will permit their software to offer features and functions that were unavailable previously.

Snodgrass cites a potential expansion of MCS analytics that sounds similar to Guyton's request. "The issue we see coming up is that people need to understand that they're not dealing with having to make one set of decisions and locking them in place. With MCS, for example, I think we'll see more analysis of the near-results. Events that fall outside of expectations will happen all the time and the combined forces that affect a plan must be understood and navigated. To do that, we need the ability to map not only where we need to go but to see what happens if we get off course a bit. We need ways of helping clients understand that if returns aren't what they expected, their spending must be flexible. If costs are higher, their money won't last as long. As of yet, the modeling hasn't done an adequate job showing the wealth of information near the plan."

