Critical Tech Trends Are Transforming the Retirement System

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Key findings

As retirement plans begin to integrate other aspects of wealth like healthcare and student loans, fintech is providing solutions.

The majority of workers want a retirement planning solution that takes into account their entire financial picture.

Millennials and married people have a particularly strong desire for account aggregation.

Critical tech trends are transforming the retirement system

A WHITE PAPER

In recent years, behavioral science insights and financial technology innovations have transformed the financial system, changed the nature of capital markets and turned retirement finance into a multi-trillion-dollar engine of capital formation. And the pace of innovation is only accelerating.

As new technologies reshape our understanding of retirement options and create transformative new opportunities, we're entering a new era of retirement innovation.

Forward-thinking financial advisors and retirement plan providers are looking for new ways to leverage these insights for the benefit of investors. And they're succeeding: Today's workplace plans provide workers of all ages with insights into their future that were never before available. They use machine learning to model essential information about individual worker finances and leverage artificial intelligence to transform insights into recommended actions. Thanks to these innovations, today's plans are able to translate the critical lessons of behavioral finance into deeply personalized, custom-made strategies that engage workers at a deep emotional level.

The still-evolving partnership of behavioral finance and financial technology, or fintech, is built on personalized financial data and delivered through always-on mobile platforms. As fintech solutions for retirement planning continue to evolve, the workplace retirement plan is becoming more central to individuals' financial lives, integrating aspects of saving, investing and income generation that once fell outside its purview.

Recent data suggests that many workers would welcome an acceleration of this trend. Earlier this year, the Empower Institute conducted a survey in conjunction with the Harris Poll to gauge employee desire for integrated retirement planning solutions. More than seven in 10 respondents indicated a desire for financial suggestions from one place that take into account their total financial picture across all accounts. Further review of the data points toward an imminent future in which it is standard practice for workplace retirement plans to embrace highly personalized fintech solutions that take a holistic view of plan participants' finances.

The evolution of financial decision-making

When contributory workplace retirement plans were first introduced, little was known about how people would use them to save and invest. Conventional economic theory held that humans are rational actors who tend to make decisions that are in their own best interests, and many assumed workers would naturally optimize their retirement savings. It became clear, however, that people weren't saving enough to generate the retirement income they needed to maintain the lifestyles they wanted. Many weren't enrolling in the plans available to them, and those who were often weren't saving enough. A different predictive model was needed.

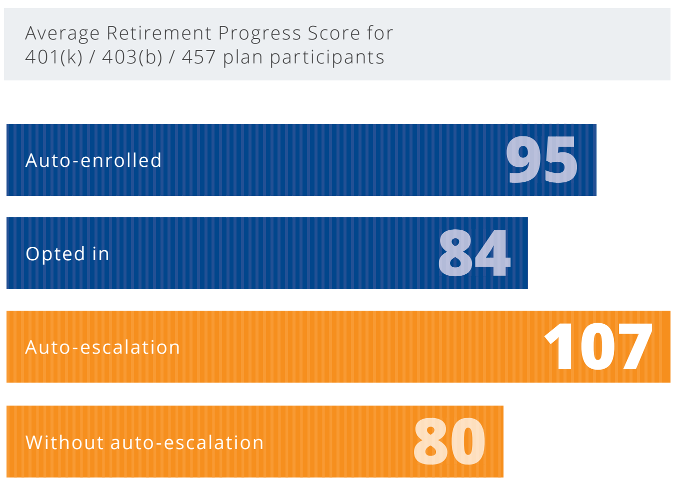
The emerging field of behavioral finance did much to explain the less-than-optimal financial decision-making that had been so widely observed. Behavioral finance experts found that financial planning decisions were typically guided not by reason, but by biases and fears. Uninterrogated inclinations led people to choose smaller short-term rewards over larger long-term rewards, a bias that poses particular difficulty for retirement savers, since workplace savings plans can encompass a time horizon as long as 50 years.

To encourage plan participation and better saving and investing habits, retirement plan architects harnessed the findings of behavioral finance to introduce two key innovations: automatic enrollment and automatic escalation. In recent years, fintech companies have supplemented these innovations with tools and platforms that allow investors to apply behavioral theories and improve their investment practices. At every stage of this process, new technologies have been brought into the mix, compounding their benefits.

The emerging role of fintech in retirement plans

Today, a decade on, automaticity is in full embrace. The majority of contributory workplace retirement plan participants can take advantage of auto-enrollment and auto-allocation to age-appropriate investment strategies, and this automation is helping people make progress toward replacing their income in retirement.

According to Empower Retirement's data, active plan participants who were auto-enrolled are on track to replace 95% of their income in retirement compared with 84% for those who opted in. Participants taking advantage of auto-escalation fare even better: They were on track to replace 107% of their income compared with 80% for those without auto-escalation. Employer match also plays a key role in savings optimization. Among active plan participants who are aware of their employer match, 76% set their match to the highest level.



Survey results are from a National Survey of 4,038 working adults (full-time, part-time, never retired) ages 18 to 65, conducted in conjunction with NMG Consulting. Respondents answered an online survey between December 18, 2017, and January 21, 2018.

But while workers are largely engaged in automatic processes, to gain increased security they need to do more by voluntarily increasing their investment deferrals. New technologies like cloud computing, machine learning and artificial intelligence are educating workers to plan more intelligently — even as plan sponsors encourage more workers toward quality defaults and increased savings allocations. Big data, unique risk modeling, portfolio customization and a new generation of digital managed accounts are enabling the development of portfolios that aim at a more elevated target: lifetime income in retirement that replaces all — or more — of a participant's working income.

Converting life savings into lifetime income has been called the Holy Grail of retirement finance, and automatic plan solutions are an important first step. But to complete this mission, the world's plan sponsors and their recordkeepers must use fintech to migrate the lessons of behavioral finance from passive automaticity to hands-on investor decision-making via sophisticated investment platforms. For example, the interactive "sliders" on the Empower Retirement platform can be used to alter savings rates. Investors can glimpse into the future via a real-time estimation — not only of their potential future asset accumulation, but of their potential future retirement income as well.

In the most sophisticated models, this retirement income estimate can be augmented by algorithms that include projected healthcare expenditures and compare individual workers' savings practices to those of their most engaged colleagues. This holistic approach to an individual's future financial status provides precision, granularity and important behavioral nudges.

As with many new technologies, fintech can no longer be considered an emerging option. Rather, it has become the new standard in retirement. Indeed, traditional customer support services including call centers, investor education, account management and financial advisory services have already been re-engineered to accommodate the fintech standard.

The next disruption of the retirement industry

Workplace plans have grown steadily for more than three decades, using behavioral finance and related financial technologies to guide the way. Indeed, 70% of American workers now have access to retirement plans, and more than three-quarters of those workers participate in plans. All told, more than half of the American workforce (54%) participates in retirement plans, with participation among government workers significantly outpacing private sector workers when defined benefit plans are included.

The evolution of retirement plans shows no sign of slowing down as the workplace savings system expands. Big data, cloud computing and machine learning are allowing strategies to be built on ever-larger information sets. In the past, a simple target date for retirement might have sufficed for plan advisors, recordkeepers or wealth managers developing retirement strategies. But today's investment plans also consider out-of-plan investment assets, insurance policies, real estate holdings, business ownership and other factors.

Liabilities such as outstanding student loan debt, anticipated educational spending for dependents, mortgages, bank loans and unsecured debt such as credit cards are also part of the picture, as are healthcare spending and saving in health savings accounts. By pulling data on all of these factors into a single investment model, financial advisors and retirement plan recordkeepers can offer customized managed accounts tailored to the needs of individual workplace savers. Critically, these technologies also guide investors through improving their current behaviors, taking maximum advantage of automatic plan defaults, surpassing those defaults with more ambitious savings and developing strategies for transforming their savings into guaranteed lifetime income.

The demand for these technologies is largely being met by a new crop of fintech startups. Since much of startups' creativity is focused on niche solutions, many of these small firms maximize market impact by partnering with, or being acquired by, large, tech-centric financial firms. Meanwhile, existing players are trying to keep up by adopting the best practices of startups when it comes to retirement planning. More companies are focused on simplifying the user experience, offering holistic advice, and integrating new and improved tools like health savings accounts, student loan solutions and open multiple-employer plans.

Looking forward, it's easy to imagine a future in which the workplace retirement plan becomes the center of the wealth picture, incorporating highly individualized data that encompasses everything from student loan debt to health savings accounts and providing predictive analysis based on past behavior and self-assessments.

Access to workplace retirement plans

	Access	Participation
All workers	70%	54%
Defined benefit plans	28%	23%
Retirement savings plans	59%	40%
Private sector workers only	66%	50%
Defined benefit plans	18%	15%
Retirement savings plans	62%	44%
State and local gov't workers	91%	80%
Defined benefit plans	86%	74%
Retirement savings plan	37%	16%

Source: Bureau of Labor Statistics, "National Compensation Survey for 2017," 2017.

Employees want an integrated planning solution

In order for such a future to materialize, however, it ultimately would have to be embraced not only by financial planning companies and plan sponsors but by plan participants as well. Do individuals want a platform where all of their wealth information is aggregated and they could have immediate access to saving and investing recommendations?

When we posed that question in a survey conducted in conjunction with the Harris Poll, we found that the majority of workers — 71% — would welcome such a platform. (See *About our study* on page 10 for more information on the scenario we provided.) This desire likely stems from widespread frustration and confusion concerning retirement planning: 60% of survey respondents said that planning for retirement was overwhelming, and 48% said they were frustrated trying to understand their overall finances and how to best manage them.

Behavioral finance and fintech glossary

Artificial intelligence
An aspect of computing that enables machines to learn from experience and adjust to new information in order to perform human-like tasks such as decision-making and pattern recognition.

Algorithmic investing
An investment methodology in which computers select investments in response to a defined set of instructions in an objective, precise and reproducible manner free of emotion and bias. Often used for the structuring of long-term investment portfolios such as pension funds and retirement savings plans.

Behavioral finance
Derived from behavioral psychology and behavioral economics, this analytical approach explores how cognition and behavior impact investment choices. Typically used to assess investment biases such as loss aversion, trend-following, recency bias, inertia and herding in investment markets.

Big data
The use of ever-larger data sets, including structured statistical data and unstructured behavioral data, in decision-making. In a financial advisory and retirement investment context, financial planning models are beginning to use big data to include out-of-plan assets, short- and long-term liabilities, and even health data to build strategies.

Context-aware computing
As computer interaction has migrated to mobile platforms, algorithms can take into account geographical location, seasonality and choice of computing device to determine how best to assist investors at any given moment. This capability has led investment firms to offer 24/7, mobile-capable account interactions.

Hyperbolic discounting
A cornerstone of behavioral finance, this investment bias is a manifestation of the human preference for smaller immediate benefits over substantially larger benefits at a later date. In personal finance, investors convince themselves of the utility of short-term spending by discounting the future value of a delayed investment return. This discounting increases over time, making it difficult for retirement savers to focus on an investment return that may not arrive for 30 to 40 years.

Machine learning
A subset of artificial intelligence, machine learning algorithms assess statistical data in an iterative fashion that "learns" how to improve performance over time. In investment markets, algorithms come to understand market interactions, correlations and impacts in pursuit of more optimal long-term investment strategies.

Nudge theory
Behavioral finance principle by which investor options are "framed" with positive reinforcements that lend order to decision-making in pursuit of improved outcomes.

Predictive analytics
By deploying data mining, machine learning and predictive models, data scientists can improve decision-making and optimize investment strategies. In retirement planning, predictive analytics is used to understand the relationship among current spending, long-term investment, anticipated financial need in retirement, projections of asset accumulation and income generation and the interrelation of debt repayment, spending and different kinds of investment (retirement, education, healthcare, housing).

Retirement education sources

By generation

	All generations	Millennial	Gen X	2nd-wave boomer	1st-wave boomer	Silent generation
Plan provider website	41%	37%	45%	46%	40%	31%
Financial advisor	31%	25%	30%	36%	40%	35%
Financial websites	26%	22%	29%	30%	29%	16%
Plan provider local office	26%	27%	31%	23%	20%	19%
Social media	20%	38%	20%	7%	5%	3%
Friends, family or colleagues	19%	24%	19%	15%	15%	10%
Financial publications	16%	11%	15%	21%	24%	19%
Plan provider call center	14%	12%	14%	14%	15%	20%
Webinars	8%	9%	8%	8%	6%	3%
Mobile phone/tablet	7%	10%	10%	4%	3%	3%
Other	8%	11%	10%	6%	6%	5%
I haven't/won't educate myself	8%	6%	7%	6%	9%	22%

Low — High

0% to 11% | 12% to 20% | 21% to 28% | 29% to 37% | 38% +

Table source: Cogent, "2017 DC Participant Planscape, Cogent™, Market Strategies International."

Currently, most workers rely on their plan provider's website for retirement education. Millennials also lean heavily on social media while older generations are more likely to turn to a financial advisor for advice.

Given the resources they depend on for information, it is perhaps not surprising that millennials are more likely than those in other demographics to be frustrated when trying to understand their finances. Among those surveyed by Empower, 63% of millennials expressed such frustration. Also not surprisingly, younger savers would welcome a digital platform that offers recommendations and takes into account their total financial picture across all accounts, with 77% of millennials indicating a desire for such a platform along with 79% of all parents.

Over half of survey respondents said they would like a clear picture of where they stand financially across all of their accounts, with millennials and all parents again expressing a stronger desire than survey respondents in other generations. And 55% of workers say they would like help making financial decisions such as paying loans or investing, including 72% of millennials and 66% of all parents.

Fulfilling fintech's promise

Ultimately, advisors and recordkeepers should consider capitalizing on fintech's capabilities to accelerate the robust plan evolution that has benefited a generation of plan sponsors and participants alike. In so doing, they will play an ever-more essential role in the financial lives of American workers and their families.

I'm frustrated trying to understand my overall finances and retirement savings and how to best manage them.

Percentage of respondents that agree by cohort	
Parents	58%
Millennials	63%
Have a financial advisor	36%
Participate in retirement plan	53%
Total	48%

I wish I could get financial suggestions from one place that takes into account my total financial picture across all my accounts instead of just looking at one of my account(s).

Percentage of respondents that agree by cohort	
Parents	80%
Millennials	77%
Have a financial advisor	78%
Participate in retirement plan	79%
Total	71%

I wish I had the help to make the financial decisions I face such as trading off paying loans or investing.

Percentage of respondents that agree by cohort	
Parents	66%
Millennials	72%
Have a financial advisor	49%
Participate in retirement plan	62%
Total	55%

About our study

In the November 2018 research conducted in partnership with the Harris Poll, we surveyed 2003 U.S. consumers. To gauge interest in a holistic financial view, we presented the following scenario to respondents:

You have access to an online service that can help provide insights on your total wealth picture to help guide your financial decisions based specifically on your individual financial circumstances, including decisions about investments, retirement planning, insurance, mortgages, student loan debt and other kinds of borrowing. You decide which accounts (bank accounts, investment accounts, credit cards, loan accounts) to include and then link them via a secure, online experience.

- Upon logging in, you will see your holistic financial picture. With your complete financial picture in front of you, it will be easier to optimize your decisions and understand trade-offs.
- Each month, the service will present you with options to help optimize your total wealth picture. For example:
  - You spent less than what you earned last month; here are some options for this money. Then it would provide three options.
  - Interest rates have fallen, and you can save $200 a month on your mortgage; click "yes" to refinance your mortgage.
  - Your retirement investment accounts are due to be rebalanced to their original targets; click "yes" to reallocate your accounts.
- Recommendations can be implemented automatically for you when opportunities arise. Or you can choose to review and decide on a case-by-case basis.
- As a part of this service, you can always get advice from a financial representative over the phone, via chat or by email

Source: This survey was conducted online within the United States by the Harris Poll on behalf of Empower from November 24-26, 2018, among 2,003 U.S. adults ages 18 and older.

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