BARRON'S
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BARRON'S COVER

Rating the Robo-Advisors

As more investors turn to automated platforms, robos are maturing—and adding a surprising new wrinkle: the human touch.

By Alex Eule

By tech start-up standards, robo-advisors are already approaching middle age. Betterment, the pioneering robo-advisor and still the largest of the independent firms, turned seven in May. It now has $9.1 billion in assets under management.

As a business, it's a modest success story. Many top-ranked financial advisors have far more in assets. But it's hard to underestimate the broader impact Betterment has had on financial advice in the U.S.

The firm and its younger rivals have introduced game-changing technology to the wealth management world, similar to Tesla pushing Detroit to embrace electric cars and autonomous driving. Unlike Tesla, though, the robo-advisors haven't built an entire car from scratch. Robo portfolios are filled with low-cost exchange-traded funds managed by fund giants like Vanguard Group and BlackRock (ticker: BLK). It would be akin to Tesla building the Model S with a Ford motor. Still, the collaboration doesn't diminish the robos' trailblazing ways.

David Brinley for *Barron's*

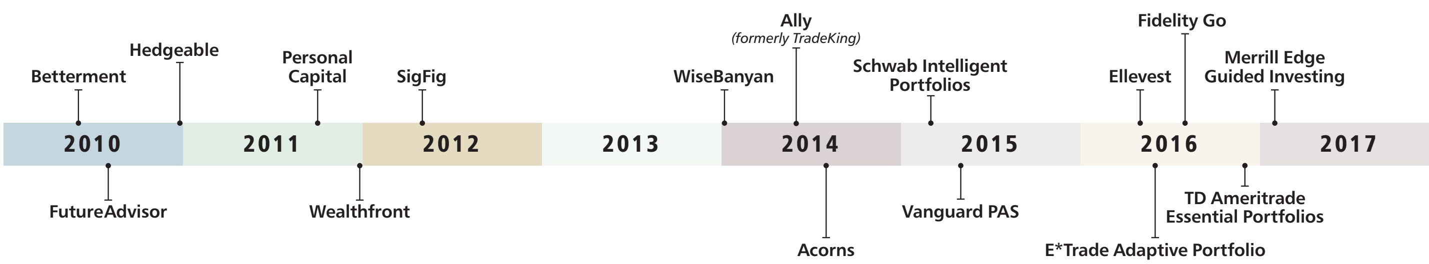
"They were a kick in the pants for the industry," says Kendra Thompson, who runs Accenture's global wealth management practice and works with some of the largest players in the world of financial advice. "They have innovated on the client experience and proven that there's demand for advice across all asset classes and all demographics."

Says Betterment founder and CEO Jon Stein: "For me, one of the most satisfying results of the work we started seven years ago is seeing the entire industry change."

Vanguard and Charles Schwab (SCHW) joined the robo movement in 2015. Their digital efforts have amassed $83 billion and $19 billion, respectively. Fidelity, Bank of America's (BAC) Merrill Lynch unit,

THE ROBO EVOLUTION

Since Betterment pioneered the first robo in 2010, the wealth management world has been left to play catch-up.



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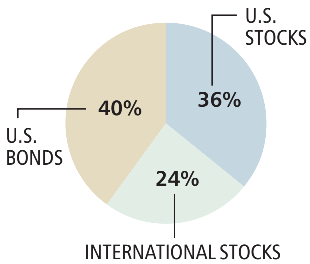
INSIDE THE ROBO MIND: THREE AUTOMATED PORTFOLIOS

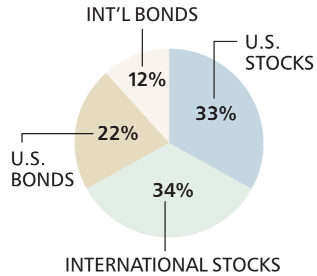
In order to track the robos, analytics firm BackendBenchmarking has opened accounts at 16 firms, aiming for a portfolio made of 60% stocks and 40% bonds. Here's how three of the robos built their portfolios.

VANGUARD PAS



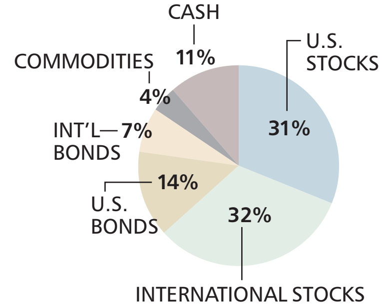
U.S. STOCKS	
Vanguard Total Stock Mkt Index Admiral	36.0%
INTERNATIONAL STOCKS	
Vanguard Total Intl Stock Index Admiral	24.1
U.S. BONDs	
Vanguard Limited-Term Tax-Exempt Fund	11.9%
Vanguard Interm-Term Tax-Exempt Adm	15.9
Vanguard Long-Term Tax-Exempt Adm	12.0

BETTERMENT



U.S. STOCKS	
Vanguard Value ETF	12.7%
Vanguard Total Stock Mkt ETF	12.9
Vanguard Mid-Cap Value ETF	4.0
Vanguard Sm-Cap Value ETF	3.6
INTERNATIONAL STOCKS	
Vanguard FTSE Developed Mkts ETF	27.7%
Vanguard FTSE Emerging Mkts ETF	6.0
U.S. BONDS	
iShares iBoxx Investment Grade Bond ETF	1.9%
iShares National Muni Bond ETF	19.6
INTERNATIONAL BONDS	
Vanguard Total Int'l Bond ETF	7.2%
Vanguard Emerging Mkts Gov't Bond ETF	4.3

SCHWAB INTELLIGENT PORTFOLIOS



U.S. STOCKS	
Schwab Fundamental US Lg Co ETF	11.0%
Schwab US Lg-Cap ETF	7.3
Schwab Fundamental US Sm Co ETF	6.3
Schwab US Sm-Cap ETF	4.2
Schwab US REIT ETF	2.5
INTERNATIONAL STOCKS	
Vanguard Global ex-US Real Estate ETF	1.8%
PowerShares FTSE RAFI Dev Mkts ex-US ET	7.8
Schwab Fundamental Int'l Sm Co ETF	5.4
Schwab Int'l Equity ETF	5.3
Schwab Int'l Sm Cap Equity ETF	3.1
Schwab Emerging Mkt ETF	3.2
Schwab Fundamental Emrg Mrkts Lg Co ETF	5.8
U.S. BONDS	
iShares 0-5 Year High Yield Corp Bd	7.4%
SPDR Nuveen Barclays Municipal Bond ETF	1.2
Vanguard Tax-Exempt Bond ETF	5.2
INTERNATIONAL BONDS	
VanEck Vectors JPMorgan EM LC Bd ETF	4.5%
Vanguard Total Int'l Bond ETF	2.6
COMMODITIES	
iShares Gold Trust ETF	4.3%
CASH	**11.2%**

Holdings as of 6/30/17
Numbers may not add up to 100 due to rounding

TD Ameritrade Holding (AMTD), and E*Trade Financial (ETFC) are more recent entrants, and Goldman Sachs Group (GS), JPMorgan Chase (JPM), and Morgan Stanley (MS) are all reportedly working on their own digital offerings.

The existing players are able to leverage their client relationships, which gives them a leg up in recruiting assets, and in some cases shifting assets, to their digital platforms.

"The vast majority of clients already maintain an existing relationship with Vanguard," says Frank Kolimago, who heads Vanguard's robolike platform, Personal Advisor Services. "They're looking to make the relationships a bit broader."

Tobin McDaniel, who runs Schwab's Intelligent Portfolios robo product, says the big opportunity lies in converting investors who still use self-directed accounts. Schwab alone, he notes, has $1 trillion in self-directed accounts. "Robo advice is a much better solution for most of those people," McDaniel says.

Meanwhile, as standalone robos have matured, they have turned to humans for help. In January, Betterment began offering human advice for a higher fee. And last week, the firm turned on a messaging service in which all of its customers can reach out to real advisors for any investing or financial-planning questions, with a response in one business day.

"The digital independent start-ups are adding human advisors, and the existing advisory firms are adding software, and we're all ending up in the middle," says Bo Lu, who co-founded robo FutureAdvisor in 2010 and continues to run the business, which was acquired by BlackRock in 2015.

For consumers, the middle is a good place to be: low-cost funds, managed by low-cost advisors.

BETTERMENT'S ORIGINAL robo tier, which now includes the advisor messaging service, charges one-quarter of 1% on invested assets. For a $50,000 investment, that's $125 a year. For 0.4%, the company now offers unlimited access to human advice; customers can schedule calls as they would at traditional advisory shops.

Vanguard, which forces its digital-advice customers to run changes through a human advisor, charges an annual fee of 0.3% of assets. Traditional fee-based advisors usually charge around 1% of assets—and that's before the cost of any funds.

The robo revolution wouldn't have been possible without ETFs, whose fees continue to fall. The funds provide investors with inexpensive exposure to indexes that track stock and bond markets. It's generally a passive form of investing, meaning investors aren't picking individual winners and losers and they're not timing the market.

Vanguard says the ETF fees for its digital portfolio average 10 basis points, or 0.1%. That gives Vanguard's service an all-in cost of 0.4%, a paltry $200 a year for a $50,000 account.

THE PASSAGE OF TIME brings another important ingredient to the robos: performance history. For the first time, most of the robos now have a track record that's a year or more. And Barron's has a comprehensive look at how they're doing, thanks to groundbreaking data from BackendBenchmarking, a Martinsville, N.J.–based analytics firm.

Backend began publishing its "Robo Report" in October 2016. Its latest quarterly report will be released to subscribers

A ROBO SCORE CARD

As they grow up, robo-advisors are establishing track records. Here's a look at how they've performed over the past year. For the first time, it's possible to see how their portfolios stack up.

One-Year Performance

Fund	Assets Under Management (mil)	Minimum	YTD	1-Year Return
Schwab Intelligent Portfolios	$19,400	$5,000	7.12%	11.94%
Betterment	9,058	None	7.63	11.68
E*Trade Adaptive Portfolio	400	5,000	6.81	11.60
SigFig	120	2,000	7.67	11.41
WiseBanyan	94	None	7.64	11.40
Vanguard PAS*	83,000	50,000	7.86	10.92
Ally (Formerly TradeKing)	18	2,500	7.15	10.23
Personal Capital	4,344	100,000	6.45	9.90
FutureAdvisor	969	10,000	6.70	8.34
Acorns	257	None	5.88	7.30
Ellevest	25	None	7.00	n/a
Fidelity Go	186	5,000	7.35	n/a
Hedgeable	70	1	n/a	n/a
Merrill Edge	Undisclosed	5,000	n/a	n/a
TD Ameritrade	800	5,000	7.78	n/a
Wealthfront**	6,763	500	5.66	n/a

*Track record compiled by linking two accounts. **Launched in 2011 but data new to report. n/a = Tracking not yet available for time period.

Sources: BackendBenchmarking (performance data) and company reports

this week (the subscription is free at backendbenchmarking.com), but Barron's got an exclusive first look.

Over the past year, Schwab's Intelligent Portfolios robo has been the top performer, by a narrow margin. Its portfolio gained 11.94%, edging out Betterment (11.68%) and E*Trade (11.60%).

Robos are building long-term portfolios, so one-year performance is an incomplete picture. But it begins to give a basis for comparison. Perhaps, more importantly, Backend's data is opening a window into how the robos craft their portfolios and how their decisions affect returns. (See the table above and the sidebar for details.)

In order to track the robos' otherwise opaque performance numbers, the research outfit opened and funded accounts at 16 different robo-advisors. It answered the robos' risk surveys with the aim of creating a portfolio that consisted of 60% equities and 40% bonds, a time-tested approach for moderate and somewhat risk-averse investing. (The firm separately opened retirement accounts with more-aggressive allocations.)

"It started out as an experiment in the garage," says Ken Schapiro, publisher of BackendBenchmarking. "All this money is going into these robo investments, but there was no track record. It's a black box."

PERFORMANCE HAS ALWAYS BEEN a touchy issue with financial advisors, who argue that customized portfolios shouldn't be compared with other accounts. Schapiro, who also runs Condor Capital Wealth Management, a Barron's-ranked advisor with almost $1 billion in assets, thinks all advisors should have some form of performance tracking, along the lines of what Morningstar does for mutual funds and ETFs.

Sure enough, the robo firms haven't always celebrated Backend's efforts. Vanguard asked to be removed from the report, and it pulled one of Backend's accounts from its automated platform. Backend immediately picked up coverage from a backup account. The firm says it's committed to being an independent source of data, and it's not asking for permission to track the robos.

The company also faced some early backlash from Wealthfront, which felt that Backend had unfairly calculated its performance. Wealthfront was removed from the report soon after. Backend corrected the issue, which came in one of its first reports, and calls the experience a "growing pain." Wealthfront has been added back to the latest report.

Betterment points out that BackendBenchmarking's report doesn't pick up the nuances in an advisory relationship—tax-advantaged decision making, for instance. The nuances are what Vanguard calls "advisor alpha"—which it calculates can add about 3% to the returns of advisor-managed portfolios.

Schapiro isn't claiming that Backend's performance numbers should be the only factor in choosing a robo-advisor: "I would say: Use it as a guideline."

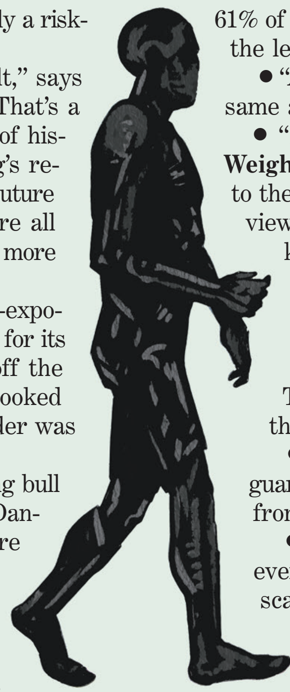
NICHOLAS JASINSKI contributed reporting to this story.

Which Robo Is Best for Your Portfolio?

ROBO-ADVISORS HAVE BEEN TOUTED AS THE PERFECT SOLUTION for tech-native millennials, but this new generation of investors has been slow to embrace them. Eighty percent of Vanguard Group's digital clients, for example, are above the age of 50. Betterment skews younger, but the bulk of assets and accounts still come from the 35-to-55 age range, the company says.

We spoke with one financial advisor who manages several billion in assets the old-fashioned way. He said he's generally been recommending them to young folks who aren't yet a fit for his practice. But when we showed him specific robo portfolios—the 60/40 models from BackendBenchmarking—he was less than impressed. "They weren't as good as I thought they would be," he told us.

He was troubled by a general bias toward value investing and a significant exposure to international markets, which carry geopolitical and currency risks. Charles Schwab's outperformance in recent quarters, for example, has come from its reliance on emerging market bonds, not exactly a risk-free strategy.



"We do have a slight value and small-cap tilt," says Jon Stein, founder and CEO of Betterment. "That's a conscious decision based on the vast majority of history." David Goldstone, BackendBenchmarking's research analyst, notes that Betterment, Schwab, Future Advisor, Merrill Lynch's Edge, and Ellevest are all weighted toward value, while the other robos are more neutral.

Folks were uniformly wary of Schwab's high-exposure to cash. The company, which doesn't charge for its basic robo platform, is able to make money off the cash held in its robo accounts. The account we looked at had 11% in cash—the next highest cash holder was Merrill Lynch's Edge portfolio, with 3%.

"It's particularly easy to criticize cash in a long bull market with low interest rates," says Tobin McDaniel, head of Schwab's robo operations. "But there are many times where cash can be one of the best-performing asset classes."

We also asked for a robo assessment from Dan Wiener, chairman and CEO of Adviser Investments and the longtime editor of the Independent Adviser for Vanguard Investors, a monthly newsletter that covers the fund giant. Here are some thoughts from Wiener and Director of Research Jeff DeMaso:

- "Vanguard's portfolio was a huge surprise. It doesn't have any foreign bonds in the mix. Its target-date funds allocate 30% of their fixed-income holdings to foreign bonds. But Vanguard simply left out the foreign bonds here. Why would they do that?"
- "It's interesting to see how similar Fidelity and Vanguard are. Both arguably have the simplest portfolios of broad vanilla stock indexes and some municipal-bond funds."
- "TD isn't far off from that but adds emerging market bonds and has no municipal bonds."
- "Schwab is very different, with heavy allocations to cash and fundamental indexes; 11.2% in cash is too high—that's a huge opportunity cost."
- "Betterment is essentially making a huge call on value, with 61% of their domestic equity holdings tilted to the value side of the ledger, which means lots of financials and utilities."
- "Acorns is aggressive: a big weight to small caps and the same amount in emerging markets as in developed."
- "E*Trade's use of the **Guggenheim S&P 500 Equal Weight** exchange-traded fund (ticker: RSP) as a complement to the **SPDR S&P 500** ETF (SPY) is a very good idea in our view, taking some of the equity weight away from the market-cap-weighted benchmarks."

Here are our takeaways:

- If you're a tech native who likes to see continuous improvements with your services, choose Betterment. The firm was first out of the gate and continues to push the envelope with advice in the digital age.
- If you're likely to panic in a down market, choose Vanguard. Its human advisors will hold your hand and keep you from making a mistake, and the firm knows its ETFs well.
- Chances are, you'll be in several Vanguard funds wherever you go. The top five ETFs used across the robo landscape all come from Vanguard, which has dominated the fund industry for years. For all the change brought by robos, Vanguard remains the industry giant.

–A.E.

David Brinley for *Barron's*