What the Evolving Robo Advisory Industry Offers

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Article Highlights

- The robo advisory industry continues to evolve with several acquisitions and new, large entrants.
- Robo-advisers generate custom allocations and automate portfolio management using software and client questionaires.
- Most services use ETFs, though some allocate to other types of securities as well. Allocations, rebalancing and tax management vary by service.

Since my article "What Exactly Do Online Investment Services Offer?" was published in the January 2015 *AAII Journal,* the robo advisory industry has evolved.

There are now more robo advisory services, and some very big investment firms have entered into the space. As such, an update is warranted.

Much of the enticement of these online advisory services comes from the desire to remove human emotion from investment decisions. Computers do not fall in love with stocks, but people do. Other enticements include lower costs compared to traditional advisers and time savings by allowing a computer to choose, reallocate and rebalance investments.

While robo-advisers are a hot topic, they control only a small portion of assets compared to traditional advisers. Assets under management (AUM) for the robo services interviewed for this article (displayed in Table 1) total roughly $63 billion. Over half of that amount can be attributed to Vanguard's robo advisory service, Vanguard Personal Advisor. Although not all the robo services currently in existence are included in the $63 billion calculation, robo services manage a very small sum of investor dollars relative to the $16 trillion managed by mutual funds.

You may notice the word "generally" used throughout this article. This is because every robo-adviser is different in their approach, methodology, asset allocation, etc. The analysis and observations in this article are based on information from the respective companies' websites and derived from questionnaires sent to each robo-adviser.

Companies were excluded from Table 1 if they did not respond to our questionnaire. Despite several inquiries, the companies that did not respond include Fidelity and Folio Investing. Motif Investing and Wealthfront initially responded, but didn't follow up or complete the questionnaire prior to the printing of this article. Appian Road, Capital One, Edelman Financial Services, FutureAdvisor, Huygens Capital and Worth Financial Management declined to participate.

Robo Advisory Industry

When robo advisory services were first offered, both investors and reporters questioned traditional advisers on their thoughts. Many described robo-advisers as a "market disruption"— something the traditional advisers should fear. However, that tone has changed. Instead of worrying about a robo revolution, many large traditional advisory firms are choosing to work with the robo-advisers via acquisitions and partnerships, while others are taking it a step further by launching their own robo service.

Among the acquisitions made in the past two years are:

- Ally Financial acquired TradeKing Advisors;
- BlackRock acquired FutureAdvisor;
- Fidelity acquired E-money;
- Goldman Sachs acquired Honest Dollar;
- Interactive Brokers Group acquired Covestor;

Table 1. Robo Advisory Services

	Website	Features	Securities
Alpha Architect Advisor	www.alphaarchitect.com/robo	global asset allocation, downside protection, & global value & momentum equity exposure	ETFs
AssetBuilder	www.assetbuilder.com	portfolio/asset mgmt	mutual funds
Betterment	www.betterment.com	financial advice, broker/dealer, wealth mgmt	ETFs
Covestor	www.covestor.com	wealth mgmt	stocks, ETFs, ADRs, smart beta, options
Hedgeable	www.hedgeable.com	wealth mgmt, portfolio mgmt platform	ETFs, stocks, MLPs, REITs, bitcoin, venture capital
Macroaxis	www.macroaxis.com	portfolio optimize & rebalance	ETFs, stocks, mutual funds
MarketRiders	www.marketriders.com	wealth mgmt	ETFs, mutual funds
Personal Capital	www.personal capital.com	wealth mgmt, investment plan, financial software, retirement plan	ETFs, individual securities
Rebalance IRA	www.rebalance-ira.com	retirement investment advice	ETFs
Schwab Intelligent Portfolios	www.intelligent. schwab.com	investment mgmt	ETFs
TradeKing Advisors	www.tradeking advisors.com	investment advice, portfolio mgmt, IRAs, portfolio optimize, rebalance, trading	ETFs
Vanguard Personal Advisor	www.vanguard.com	portfolio mgmt, investment advice	ETFs, mutual funds, active funds, individual securities
WiseBanyan	www.wisebanyan.com	investment mgmt, financial plan, broker/dealer	ETFs

- Invesco acquired JemStep;
- Northwestern Mutual acquired Learnvest; and
- United Capital acquired FlexScore.

Among the most notable launches in the past two years are:

- Alpha Architect launched Alpha Architect Advisor;
- BMO Harris Bank launched SmartFolio;
- Charles Schwab started Schwab Intelligent Portfolios;
- E-Trade launched Adaptive Portfolio;
- Fidelity started Fidelity Go; and
- Vanguard started Vanguard Personal Advisor.

In addition, Wells Fargo and U.S. Bancorp have both announced plans to launch their own robo advisory services.

Large brokerages and investment management firms are finding that robo-advisers and their tools are useful to the traditional financial adviser model. Although traditional advisers were already using complex financial models and systems, robo technology is helping them automate their practices and better engage with clients online.

There has also been input from the Securities and Exchange Commission (SEC) and the Financial Industry Regulatory Authority (FINRA) regarding robo-advisers and their services. The regulators issued an "investor alert" in May 2015, warning that while "automated investment tools may offer clear benefits—including low cost, ease of use and broad access—it is important to understand their risk and limitations before using them." They listed five guidelines for investors considering a robo-adviser:

1. Understand any terms and conditions.
2. Consider the tool's limitations, including any key assumptions.
3. Recognize that the automated tool's output directly depends on what information it seeks from you and what information you provide.
4. Be aware that an automated tool's output may not be right for your financial needs or goals.
5. Safeguard your personal information.

The Department of Labor (DOL) ruled in April 2016 that the fiduciary standard would be extended to apply to advisers who provide advice on retirement plans, adding another layer of complexity. The fiduciary standard requires brokers to put their clients' best interests before their own. Traditional brokers will be held to this standard in regard to retirement accounts. There is much debate as to whether robo services can live up to the fiduciary standard. We discuss some of the arguments in the article "Possible Pitfalls of Robo-Advisers" in the September 2016 issue of *Computerized Investing*.

Portfolio Review	Tax Guidance	Retirement Withdrawal Guidance	Manager of Money	Communication	Minimum Account Size	Total Assets Under Management
✔		✔	firm	chat via app, email, phone, website messages, video-conference, in-person	$50,000	entire business: $400 million; robo: $10 million
✔		✔	firm	phone, in-person, email	$50,000	NA
✔	✔	✔	firm	email, phone, chat	none	$5.6 billion
✔		✔	firm	website, chat, email, phone, Skype, blog, weekly newsletter, in-person	$10,000	$13 million
✔			firm	mobile app, email, text, social media, blog, phone, live chat	none	$61 million
✔			client	website, phone, email	none	$30 billion
✔			client	website platform, email, phone, online chat	none	$5 billion
✔	✔	✔	firm	phone, email, text, video-conference, online chat	$25,000	$2.5 billion
✔		✔	firm	website, phone, email	$100,000	$350 million
✔	✔	✔	firm	phone, email, chat	$5,000	$8.2 billion
✔			firm	email, phone, online chat	$500	$15 million
✔	✔	✔	firm	website messages, email, phone	$50,000	$3.8 trillion; $41 billion
✔	✔		firm	dashboard messages, email, phone	$1	$67 million

Robo Services: An Overview

What do robo-advisers do? Generally speaking, they are online investment management companies that generate "custom" asset allocations, place trades, invest in a tax-efficient manner and automatically rebalance an investor's portfolio. This said, each robo-adviser has a different value proposition for their clients.

Furthermore, some services don't customize the asset allocation for each investor, but instead categorize an investor based on responses to a set of 10 or so questions, then allocate his or her portfolio based on their age, investment goals and risk tolerance.

Most robo-advisers invest primarily in exchange-traded funds (ETFs); however, as shown in Table 1, many of them now offer other securities as well.

Many of the robo-advisers use "goal-based investing;" allowing the investor to choose from a generalized list of goals such as preparing for retirement, saving for a major purchase or building wealth. The investor's next option is choosing whether they are investing for the short, medium or long term and how much they want to deposit. Betterment, Schwab Intelligent Portfolios and Vanguard Personal Advisor specifically refer to following a "goals-based model."

In order to determine a person's risk tolerance, some services will ask questions such as "if the market dropped 15% in one day, what would you do?" The response options are usually a version of: sell everything, reallocate my investments or purchase more. Some services ask an investor to assess his or her risk tolerance on a scale from very low to very high.

Based on a person's age, goals and risk tolerance, the robo-adviser generates a recommended asset allocation. In most cases, the asset allocation models change depending on whether the investor is opening a retirement account or a taxable account. Tax-efficient investments are placed in the taxable account, and less tax-efficient investments go in the retirement account. Robo-advisers roughly determine tax efficiency by the cash flow distributed by an investment: The higher the cash flow (dividend and interest payments), the less tax-efficient the security. Alpha Architect, AssetBuilder, Betterment, Personal Capital, Schwab, Vanguard and WiseBanyan all mentioned "tax-efficient investing."

Of the companies responding to our questionnaire, Betterment, Personal Capital, Schwab Intelligent Portfolios, Vanguard and WiseBanyan said that they offer tax guidance. Each of these services made it clear that they are not tax professionals and offer only a "high level" of tax guidance. Of the companies researched, Betterment discussed tax efficiency the most. Aside from tax-efficient investing and tax-loss harvesting, Betterment offers other tax-related tools such as TaxMin Lot Selling, which chooses which specific lots are most tax-efficient to sell, and Tax Impact Preview, which estimates the taxes potentially owed before an investor's allocation is changed.

Vanguard Personal Advisor appeared to be the most comprehensive and "hands-on" of the robo services. The service requires its clients to speak with a human adviser. It also charges for the creation of an investor's financial plan, which can range from free to $1,000, depending on how much you invest.

Alpha Architect, AssetBuilder, Betterment, Covestor, Personal Capital, Rebalance IRA, Schwab Intelligent Portfolios and Vanguard Personal Advisor all offer clients guidance on retirement withdrawals. However, be sure to ask a prospective service exactly what it offers before expecting to receive specific guidance on withdrawals or investing in retirement.

Several of the robos interviewed specifically mentioned a tax-loss harvesting feature, including Betterment, Hedgeable, Personal Capital (with over $25,000 invested), Schwab Intelligent Portfolios (with over $50,000 invested) and WiseBanyan. Tax-loss harvesting is the practice of selling a security that has fallen in price in order to "harvest" a loss and subsequently offset taxes on both gains and income. The sold security is replaced by a similar one, which allows the investor to maintain the asset allocation. Schwab Intelligent Portfolios actually displayed the funds they "switch" between for tax-loss harvesting purposes.

Both Personal Capital and Vanguard Personal Advisor stated that they can provide "high-level" guidance on more complex topics. Vanguard's range of services include help on estate planning, charitable giving, Roth IRA conversions and trust services, while Personal Capital offers help on insurance planning, 529 plans, home purchasing and refinancing, stock options, deferred compensation and estate planning.

While other firms may offer account aggregation, only Betterment, Hedgeable, Personal Capital and Vanguard specifically mentioned that an investor can link to other investment accounts on their platforms.

Based on the information we collected, Alpha Architect, AssetBuilder, Betterment, Hedgeable, Personal Capital, Schwab Intelligent Portfolios, Vanguard Personal Advisor and WiseBanyan allow clients to set up recurring deposits. Betterment also recommends deposit amounts for investors based on their stated goals.

Macroaxis and MarketRiders don't manage money for their clients. Instead, they help investors optimize their portfolios and recommend rebalancing that the investor can do within his or her own brokerage account. Another company that operates in this space is MyPlanIQ, which was described in the May 2016 issue of *Computerized Investing*.

Asset Allocation Recommendations

Of the robo services that provided information to us, a handful allow prospective clients to go through a questionnaire before signing up to receive an asset allocation recommendation. They include Alpha Architect, AssetBuilder, Betterment, Hedgeable, Schwab Intelligent Portfolios and TradeKing Advisors. Investors who have a retirement or brokerage account directly with Vanguard can take the Vanguard Personal Advisor questionnaire; however, an allocation is not provided without first speaking to an adviser.

To compare the allocation recommendations, we completed client questionnaires using the profile of an "average" AAII member: age 65, preparing for retirement, slightly risk-adverse but willing to take on some volatility, and investing for the medium to long term. An initial investment of $50,000 was used, which represents a fraction of the average AAII member's portfolio. Both a taxable and retirement account were selected where applicable to see how the allocations changed based on account type.

Every service's questionnaire was different, so it was not possible to enter the exact same profile using our "average" AAII member description. However, all of the robos categorized this hypothetical investor in the medium to medium-high risk category for both taxable and retirement accounts.

Generally speaking, most of the companies excluded real estate investments and corporate bonds from taxable accounts for our hypothetical investor. An exception was Schwab Intelligent Portfolios, which included U.S. real estate investment trusts (REITs), international REITs and U.S. corporate high-yield bonds in a taxable allocation.

Hedgeable gave our hypothetical investor the highest allocation to U.S. stocks in taxable accounts, at 86.5%. Hedgeable also had the highest retirement account allocation to fixed income, at 48.3%. Alpha Architect and Betterment made no allocation to cash, but Schwab Intelligent Portfolios allocated 8.2% to cash in a taxable account and 8.5% to cash in a retirement account. It's worth noting that Schwab Intelligent Portfolios states that it will maintain a cash balance of 6% to 30% for every client.

Betterment and Schwab had the most specific breakdowns of allocation (from a prospective client point of view), showing a distinction between large-cap and small-cap stocks, U.S. and international REITs, U.S. bonds, U.S. high-yield corporate bonds and U.S. investment-grade bonds. In comparison, most other firms generally grouped these into the broad categories of domestic stocks, domestic bonds and real estate.

TradeKing Advisors didn't allocate any funds to currencies, gold and precious metals or commodities, whereas Hedgeable included a 2% allocation to currencies in the taxable account and 6% to master limited partnerships (MLPs) in the retirement account recommendations for our hypothetical investor. Schwab allocated 5% to gold and precious metals in the retirement account, and nearly 6% in the taxable

Table 2. Robo-Adviser Fees

Robo-Adviser	Management Fee	Expense Ratio	Trading Fee (Commission)
Alpha Architect Advisor	0.25% of AUM	0.53%-0.79%	—
AssetBuilder	0.20%-0.45% of AUM	0.25%-0.48%	$20-$49.95/trade
Betterment	0.15%-0.35% of AUM	0.05%-0.36%	—
Covestor	0.25%-1.50% of AUM	NA	$1 avg
Fidelity Go	0.04%-0.35% of AUM	0.04%-0.48%	—
Hedgeable	0.30%-0.75% of AUM	0.10% avg	—
Personal Capital	0.89% of AUM*	ND	—
Rebalance IRA	0.50% of AUM	0.15%-0.20%	$50-$70 at rebalance
Schwab Intelligent Portfolios	—	0.23% avg	—
TradeKing Advisors	$1/mo.-0.50% of AUM	ND	—
Vanguard Personal Advisor	0.30% of AUM*	0.15% avg	ND
Wealthfront	0.0% - 0.25%	0.12% avg	—
WiseBanyan	—	0.12% avg	—

NA = not applicable   ND = not disclosed
**Fees are lower for large accounts*

account. Betterment's allocation did not include commodities, currencies or precious metals, while Alpha Architect recommended a 20% allocation to commodities.

Alpha Architect, AssetBuilder and Betterment specifically mentioned "value" investments: AssetBuilder allocated 25% of the portfolio to value, while Betterment and Alpha Architect allocated 18.8% and 10%, respectively.

AlphaArchitect devoted 20% of the portfolio to momentum stocks, while AssetBuilder allocated 14% of our hypothetical investor's portfolio to growth stocks.

Alpha Architect, AssetBuilder and TradeKing Advisors didn't make an allocation distinction between retirement and taxable accounts when filling out a questionnaire without having an account.

Managing Volatility & Rebalancing

Alpha Architect, Hedgeable and TradeKing Advisors were the only robo-advisers that mentioned any sort of downside protection or volatility-specific tool. These downside protection systems seek to minimize drawdowns from an investor's portfolio. They monitor trade signals that trigger "exits" from assets to cash and move funds accordingly. Alpha Architect cautions investors that if they choose to use their proprietary downside protection tool and are investing in a taxable account, they may incur a gain or loss in accordance with the strategy.

During the Brexit sell-off in June, Betterment halted trading by clients on its platform. When we asked about the trading halt, the firm responded, "On occasions when the market is impacted by an economic shock, we may delay or temporarily pause trading to avoid the possibility of extreme price dislocation. In the event of this happening, clients still have access to liquidity and can override our recommendation by contacting us."

While Betterment's trade halt was controversial at the time, many financial advisers agreed that temporarily suspending the ability to trade can help remove investors' emotions on a volatile day. Long-term investors should not be overly concerned with day-to-day volatility in the market and can hurt their portfolio by acting irrationally.

When asked about volatility, the other robo services essentially said, "we take a long-term investment approach and don't participate in the short-term fluctuations of the market." For many robos, market volatility is generally "managed" by computer systems that decide when it's time to rebalance. During times of higher market volatility, the portfolios may be rebalanced more often because the market movements are more frequent and significant.

Rebalancing decisions are often made by pre-determined "rebalancing bands" that differ for each robo service. Based on the company's disclosure, Vanguard's rebalance band is a 5% change from target allocation and quarterly checks determine if rebalancing is needed. Vanguard noted that the band may change based on the client's risk tolerance, not due to changes in the market.

Personal Capital was the only company to mention the word "turnover." The company stated that its goal is to keep turnover below 15% in a given year. Personal Capital considers "high level asset classes" for rebalancing when they deviate "more than a few percentage points from the target."

Rebalance IRA stated that it rebalances on average two times a year. WiseBanyan says it will rebalance if a portfolio strays 5% from its target allocation. Betterment allows for a 3% portfolio drift (sum of absolute deviations of each asset class divided by 2) before rebalancing, but also mentions that portfolio drift can stay above 3% if there are no long-term lots to sell.

While rebalancing during volatile markets can be advantageous to investors, investors also need to be sure to consider the fees involved with rebalancing. As displayed in Table 2, Alpha Architect, Betterment, Fidelity, Hedgeable, Personal Capital, Schwab Intelligent Portfolios, TradeKing Advisors, Wealthfront and WiseBanyan reported that they do not charge for trades. With these services, frequent rebalancing will not affect the fees you're charged.

However, frequent rebalancing can affect your returns over time in other ways. Too much rebalancing can affect the momentum of your portfolio's return. Additionally, as William Bernstein

Table 3. Asset Management Fee Ranges

Client Asset Level	Robo Service	Traditional
$100,000	0.0%-0.89%	1%-1.49%
$300,000	0.0%-0.89%	1%-1.24%
$750,000	0.0%-0.89%	0.75%-1.24%
$1.5 million	0.0%-0.89%	0.75%-0.99%
$5 million	0.0%-0.69%	<0.75%-0.99%
$10 million	0.0%-0.49%	<0.75%

noted in the September *AAII Journal* ("Investing to Avoid the Consequences of Being Wrong"), having a one-size-fits-all rebalance band can be less effective because one asset class can be more or less volatile than another. Bernstein believes that each asset class should have its own rebalancing band.

Rebalancing too often can also affect your returns via taxes by incurring more short-term gains, which are taxed at a higher rate than long-term gains.

The Costs of Using a Robo-Adviser

Table 3 compares the management fee range for the robo services to that of traditional advisers for different account sizes. Schwab Intelligent Portfolios and WiseBanyan both charge no management fee irrespective of the amount of assets managed. In the case of Wealthfront, the first $10,000 is managed for free.

Lower costs compared to traditional advisers has been a strong point in the value proposition for many robo-advising firms.

The Expense Ratio column in Table 2 represents the expense ratios of the underlying instruments used by the robos. An NA is displayed for Covestor because their managers use a wide range of assets as opposed to solely investing in ETFs and mutual funds; it felt that an average expense ratio range was not applicable to its service.

ND in the table stands for "not disclosed"—meaning that specific information could not be found on the robo-adviser's website.

Personal Capital and Vanguard Personal Advisor have an asterisk by their management fees because both offer lower fees for accounts that reach well over a couple million dollars.

On a relative basis, based solely on management fees, robo-advisers offer a lower-cost alternative to traditional advisers. The key is what services are offered for the respective fee. If a traditional adviser, in addition to managing money, handles life insurance needs, health savings accounts and college savings as well as assists with estate planning and offers extensive retirement and tax planning help, the higher fee may be justified. Such services are not generally offered by robo-advisers.

Comparing Performance

A major question many investors ask is, "How does the performance of the robo-advisers compare to that of traditional advisers?" This is not a question that is easy to answer.

Most of the robo advisory services that post performance online display backtested or model-based results. Each robo-adviser has different inception dates, and some don't disclose those dates. Prospective clients have to search for the performance disclosures just to read the fine print. Most of the returns are displayed net of fees and assume reinvestment of dividends and interest.

Although the lack of sound performance figures may seem disheartening, displaying truly representative returns is difficult because many investors have customized portfolios—fees, allocations and rebalancing intervals can all be different on an account-by-account basis. Clients open accounts at different times, so even if the respective risk/reward profile categories don't change, the starting portfolio value will. Also, many of the robo services haven't been around long enough to present meaningful longer-term return figures, hence the reporting of backtested results.

Each company stated that they have historical performance figures available; however, there were caveats. In order to see historical performance for Alpha Architect, MarketRiders and Rebalance IRA, you must have an account. Alpha Architect will send historical figures to prospective clients on a case-by-case basis, or refer clients to their book, "DIY Financial Advisor: A Simple Solution to Build and Protect Your Wealth" (Wiley Finance, 2015) where the strategies are defined, explained and analyzed.

Schwab Intelligent Portfolios, Vanguard Personal Advisor and WiseBanyan all state that investors can see performance by looking up historical performance of the funds within each robo strategy the firm offers. However, of the three, Schwab is the only one that actually discloses the particular funds used in a given strategy and their respective weightings.

Of the companies in Table 1 that actually post their performance figures online, only Betterment and Personal Capital publish a benchmark. (I could only find readily accessible performance figures online for Asset Builder, Betterment, Hedgeable, Personal Capital and TradeKing.)

Who Should Use Them?

Robo-adviser services are likely a better choice for investors with less complex financial situations. They may be a good choice for an investor looking to "set it and forget it," who wants a basic diversified portfolio and is less interested in personally managing his or her money.

See the online version of this article for more information and expanded data. ➤

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