

Robo Advisors

How Robos Are Winning, Destined to Fail,
and Changing Investing Forever

NITROGEN WHITE PAPER

Over the last five years, robo advisor platforms have gained a reputation as investing game-changers for both good and bad. It's been estimated that robo advisors will manage nearly 10% of AUM globally by 2020¹. Depending on the source, that number could be anywhere from \$2- to \$8-trillion². When robo advisors appeared after the recession in 2008, the concern was that human advisors would become obsolete. This worry continues today, even though B2C robo growth has declined year over year.³

Where Did Robo Come From?

A robo advisor is a piece of technology that investor clients can use to access affordable, convenient, automated investment advice. The term "robo advisor" was first used by Richard J. Koreto in a 2002 article in Financial Planning magazine entitled "Robo-Adviser: In a new world of intense 401(k) anxiety brought about by the Enron fiasco, the only hand investors may have to hold may be digital."^[4] Koreto's "robo" had no resemblance to what we now call a robo advisor, however. The present reality of a robo advisor was an unimaginable idea in the early 2000's.

Then the crash of 2008 happened. The idea of a robo advisor took root—most notably, Betterment and Wealthfront (known at the time as KaChing). Both platforms came into the spotlight in 2010 when Wealthfront announced "new functionality that [made] the site less of a search engine for talented fund managers and more of a personalized, hand-holding recommendation engine."^[5] Betterment made waves at TechCrunch Disrupt with a promise "to invest your money at a low cost, and manage it in a way that gives you a better outcome."^[6] Platforms like these are self-directed robos because all of the "advice" comes from algorithms, so the client has no contact with a human advisor during the setup process. Investors have the option with some of these robo platforms to "add-on" human advice for an additional fee (usually 25bps), but that advice could come from any one of the several advisors employed by the platform.

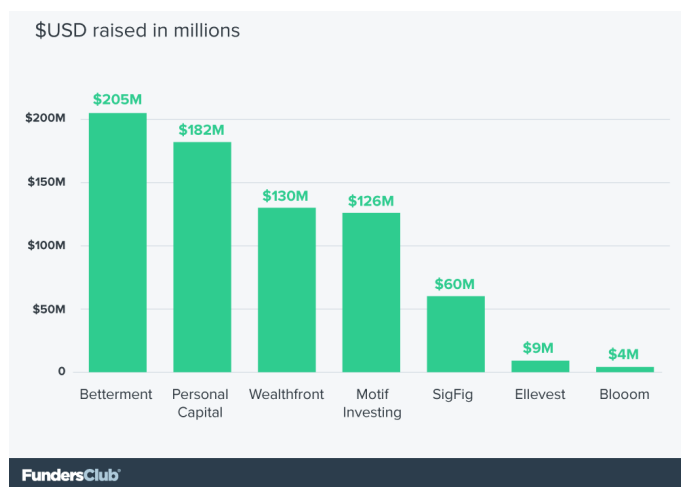
As these self-directed robo platforms became more prominent in the public eye, they caused a major shift in the wealth management industry. While some thought the human advisor's days were numbered, others speculated that the client acquisition cost for these self-directed robo advisors was so high that they would never be profitable.

"Disruption describes a process where a new, smaller sector of an industry is able to challenge established incumbent businesses using fewer resources and innovative technology. As the old businesses focus on improving their products and services for their most profitable customers, they exceed the needs of some segments and ignore the needs of others." "Entrants that prove disruptive begin by successfully targeting those overlooked segments, gaining a foothold by delivering more-suitable functionality—frequently at a lower price. Incumbents, chasing higher profitability in more-demanding segments, tend not to respond vigorously. Entrants then move upmarket, delivering the performance that incumbents' mainstream customers require, while preserving the advantages that drove their early success. When mainstream customers start adopting the entrants' offerings in volume, disruption has occurred."^[7]

Where Robos Gain Assets

The segments ignored by traditional investing—mostly young, low net-worth individuals—have benefited most from the low-cost option of a robo advisor. “Young people have been largely overlooked by the [wealth management] industry because it wasn’t economical to service them,” said Adam Nash, founder of Wealthfront, “Technology changes the debate because it can be economical to help young people with their money.” With advisors switching to fee-only or reduced compensation brokerage models—and in the shadow of DOL—low net-worth prospects just don’t bring the same ROI. Wealthfront, which had \$4.65 billion in AUM as of January 2017, reports that 60% of its clients are under 35 and 90% are under 50.^[8]

FIGURE 1. Robo-advisor startups are raising millions.



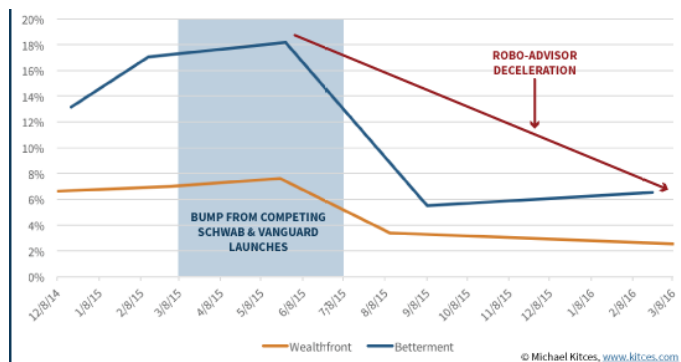
Robo advisors have raised significant funds from venture capitalists, with seven in the figure above pulling in nearly three-quarters of a billion dollars alone.^[9] As of April 2017, robo advisors had raised \$1.32 billion since 2012.^[10]

Over a billion dollars of funding for B2C robo advisors is an impressive figure, but how much of a hill do robos have to climb to make a profit for their investors or, at the very least, break even? Let’s look at the numbers.

With the affordability and convenience to consumers comes a price: profitability. While most flat-fee financial advisors collect 1%, robo advice is often far below that, averaging from “free” to 50bps. Factor in the low account minimums and high client acquisition costs, and robo looks like a great technology model, but a bad business model. In the publication Financial Planning, Aaron Klein, CEO at Nitrogen said, “The self-directed robos are stuck...the customer acquisition costs are rumored to be \$825 for a customer averaging \$63 in annual revenue.”^[11]

Evolution of Robo

FIGURE 2. Robo-advisor montly asset growth rates since Q4 2014



Robo advisors have raised significant funds from venture capitalists, with seven in the figure above pulling in nearly three-quarters of a billion dollars alone.^[9] As of April 2017, robo advisors had raised \$1.32 billion since 2012.^[10]



According to a Morningstar study, Aaron Klein's figure might even be conservative. They estimate client acquisition costs can go as high as \$1000.^[12] So how have self-directed robos had so much perceived success with such negative returns? Simply, the rounds of funding they received at their peak are still serving as the measure of their success, not their actual profitability. The same Morningstar study in 2015 estimated that "the break-even client asset level for robo-advisors is from \$16 billion to \$40 billion." Betterment is currently the closest self-directed robo with \$8 billion in AUM as of May 2017.^[13]

The affordability and convenience come at a cost for investors as well. The lack of personalization means that robo advisors are not able to construct investment strategies that handle every investor's unique needs. Plans to start a business in three years, kids going to college, becoming caregivers to parents—these situations are not factored in, which means that portfolios generated by robos are essentially incomplete (or only created based on a fixed point in time). As an investor's needs become more complex, the lack of customization means that investors may be at a disadvantage. It turns into another case of "you get what you pay for."

Another concern is that today's robo advisors have never been tested in times of economic stress, having come into the market post-2008. Inexperienced investors, in the event of another extreme market fluctuation, will have no advisor to guide them through the turbulence and might abandon their investment strategies.^[14]

"Robo can be a great technology model, but it has yet to prove itself as a great business model. I believe the human advisor is something worth betting on deep into the future."

AARON KLEIN, CEO AT NITROGEN

Can a Robo Advisor Be a Fiduciary?

Under the DOL's proposed Fiduciary Rule, digital advisors will be considered fiduciaries under ERISA for advice provided to qualified retirement plans and individual retirement accounts. Moving forward, digital advisors in the US will have to evaluate whether they need to make changes in their programs to ensure that they are compliant with ERISA fiduciary requirements. This may not require changes within the algorithms provided to clients, but it could impact recommendations made during the client engagement process, the specific products recommended to clients, and compensation structures.^[15]

Can a robo advisor ensure that it has its clients invested in their best interest if their portfolio is generated via an algorithm? The answer to this question is not yet clear, but there have been developments that might make "robo regulators" the go-to tool for fiduciaries. Microsoft announced a compliance and risk engine powered by Watson for financial professionals in the IBM Cloud. Watson Financial Services is programmed to look for 60,000 regulatory citations, and review transactions and cases related to potential financial crimes.^[16] Robo legitimacy as a fiduciary is up for debate, but as the fiduciary standard puts stress on cybersecurity, compliance, and record departments, robo could be geared to help fiduciaries work better under DOL guidelines (rather than robo being the fiduciary itself). The advisor gets to step back and be that fiduciary the client needs.



While the B2C robo space hasn't shown evidence of being scalable or profitable, a new wave of technology has shown signs of growth. B2B backend platforms are becoming a common tool in the advisor arsenal.

These services are marketed to advisors as a way for them to scale their practices at an affordable level of service, in exchange for a portion of bps. The first wave of self-directed robo advisors was direct competition to financial advisors. Today, B2B robo and other back-office platforms are positioning themselves as allies that can help advisors increase their AUM by freeing up more time to build trusted relationships and focus on client needs.^[17]

Some large asset managers have gotten involved by purchasing B2C robos, the most notable being BlackRock's purchase of FutureAdvisor for \$150 million. BlackRock has turned FutureAdvisor into a robo advisor for advisors. These advisors are equipped with a "B2B2C" model in their arsenal. This provided a way for BlackRock to utilize FutureAdvisor's technology as an automated solution for advisors interested in using BlackRock's ETFs.^[18] BlackRock has attributed their advisor technology to their growth in AUM, which currently stands at \$4.7 trillion.

Robos and Risk

Risk questionnaires of the past have received their share of criticism—for assigning subjective semantics (e.g. "moderately conservative") based on age, for using spurious correlations (driving a sports car equates to higher levels of risk), and for using market sentiment to influence risk preferences. Research associated with self-assessment of risk has established that investors are unable to accurately predict their risk tolerance, and younger working adults tend to overestimate their risk tolerance compared to older working adults. A study by Hallahan, Faff, and McKenzie compared self-estimated risk tolerance to scores on a 25-item risk tolerance scale. Results from their study found that 73% of respondents underestimated their risk while only 23% overestimated and 4% accurately estimated their tolerance for risk.^[19]

An accurate estimate of risk tolerance requires a rigorous, objective methodology that removes emotional, subjective, and cultural bias. It's up to risk assessment tools to facilitate a productive conversation around investment risk and shape expectations accordingly.

We've seen how effective the human advisor can be with a robust risk alignment platform, but how do the biggest self-directed robos today, Wealthfront and Betterment, stack up against advisors—and each other?

Very differently.

Wealthfront

Wealthfront's risk assessment occurs during the account opening process, and only two questions explicitly refer to risk. The first asks whether maximizing gains or minimizing losses is more important to the investor. The option for "both" is available, as well.



Let's get to know you.

When deciding how to invest your money, which do you care about more?

- ☐ Maximizing gains
- ☐ Minimizing losses
- ☒ Both equally



The second question poses a hypothetical: what would you do if your portfolio experienced a 10% loss in value? The investor must select between four actions—and “ask for advice” isn’t one of them.

Let's get to know you.

The global stock market is often volatile. If your entire investment portfolio lost 10% of its value in a month during a market decline, what would you do?

Your behavior during a market downturn is important to understanding your risk tolerance.

☐

 Sell all of your investments

☐

 Sell some

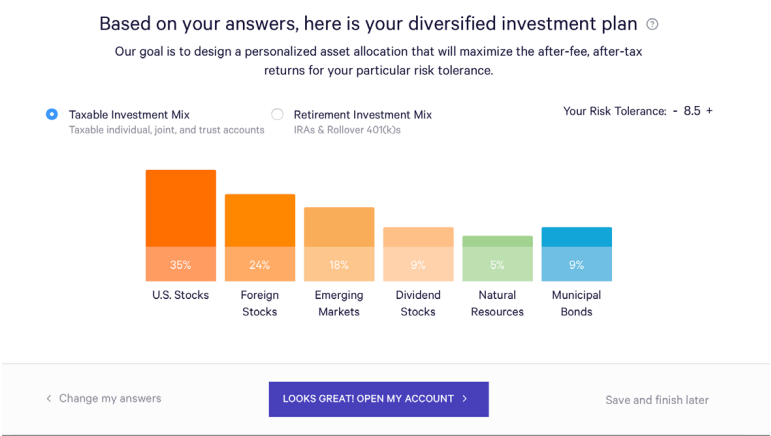
☐

 Keep all

☒

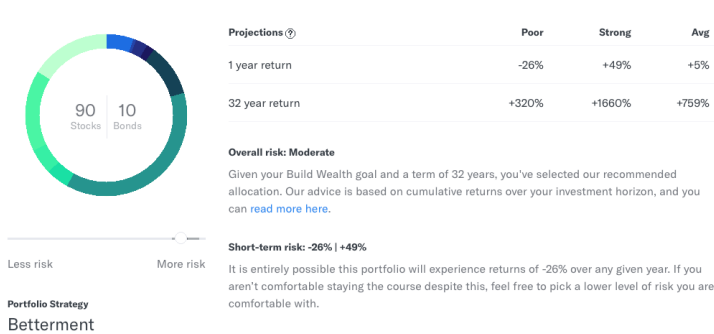
 Buy more

Once the assessment is complete, Wealthfront recommends a distribution of asset classes and assigns them a risk score on a 1 to 10 scale.



Betterment

Betterment’s onboarding process neglects risk altogether. Investors are asked the standard goal-based questions (if investing is for retirement, building wealth, big purchase, etc.), and asked to include marital status and age. Only after Betterment’s investment recommendation do clients have the ability to adjust risk. This adjustment is made on a sliding scale from “less risk” to “more risk,” manually.



After analyzing each company's approach, both robo advisors fall short of assessing risk tolerance and risk capacity in a robust and actionable way. While Wealthfront does out-nudge Betterment in a head-to-head, it doesn't come close to meeting the scientific scrutiny of other risk assessment tools. Prospect Theory, the Nobel Prize-winning academic framework that inspired the Risk Number®, asserts that an assessment of risk must be performed with real dollar amounts to establish real consequences for the decision maker. Portfolio recommendations require quantitative measurements and as many questions as are practical in order to gauge inconsistencies.^[20] Generating hypotheticals based on portfolio percentage (such as Wealthfront's 10% loss scenario), instead of real dollar amounts, isn't as relevant or effective for investors.

It doesn't take much for an advisor with the right tools to outdo the major self-directed robos when it comes to pinpointing risk tolerance/risk capacity, facilitating a productive conversation about investment risk, and setting expectations with their clients.

The Future of Robo

Based on what we've looked at so far, we see four possible futures for robo advisors:

1. **Conquer** — Will B2C robos defeat the human advisor once and for all? At their inception, many advisors feared that self-directed robos would become the norm and their profession would become obsolete, much like how online travel agencies like Expedia and Priceline changed the travel industry.

Verdict: this doesn't seem likely.

We've seen this dynamic before. In 1993, Intuit acquired a little-known piece of software called TurboTax, which mainstreamed self-directed tax service. TurboTax made tax help more affordable for those with Intuit's QuickBooks software. The integration with QuickBooks meant that professionals in company finance and bookkeeping departments were able to export their business data with a click, saving hours of manual data input. People with less complex tax needs were also able to file taxes for significant savings, and experts feared TurboTax would shut down the H&R Blocks and independent tax advisors of the world. But the opposite happened. Decades after TurboTax was developed, H&R Block reported employment of over 90,000 human tax advisors.^[21] Self-directed software didn't eliminate advisors, it simply automated simpler taxes and allowed taxpayers themselves to do a bit of the driving. The integration that TurboTax offered also sparked innovation, making tax-preparation a more intuitive experience. Need tax advice when things get complicated? There's still an H&R Block right around the corner.

2. **Collapse** — Will B2C robos fall apart and go away completely? Many think self-directed robos will run through their capital and ultimately collapse under the pressures of a flawed business model.

Verdict: while scalability is certainly a factor, outright collapse doesn't seem likely either.

The emergence of robo and its wide adoption by overlooked segments of the population is a solid indicator that there is a market for completely digital advice. An industry with no audience and no future doesn't raise \$1.32 billion in 5 years.

3. **Capitulate** — Will B2C robos sell out to larger firms?

Verdict: this is a likely scenario, since it is already in full swing with large acquisitions in recent years.

With venture capital funding running out and client acquisition costs being what they are, it's inevitable that smaller robo players will bow out or be acquired by the bigger ones, but this would hardly be an industry-wide failure. Large firms that need the tech will purchase robos and have them exist in parallel with their traditional business model. While this doesn't completely defeat the B2C robos, it weakens the disruptive potential its investors predicted.



4. **Collaborate** — Will human advisors collaborate with B2B robo technology to supercharge their advice?

Verdict: this is the most likely scenario, since it is already showing widespread adoption in the B2B2C sector and support throughout the industry.

Robos could become the investment advisor’s equivalent of an ATM at a bank. We can hardly imagine life without them, and a few years from now most investors will hardly be able to imagine an advisor without some sort of self-service technology on their side.

Let’s reexamine the H&R Block scenario. Near the turn of the millenium, H&R Block released a self-directed tax software of their own. Has it cannibalized their tax advice business? No. Taxpayers in need of personal assistance through the self-directed process can still meet face-to-face with a tax advisor and receive assistance seamlessly. Similarly, robo advisors simply expand the investment pie—giving a new segment of the population access to investing.^[22] Leveraged by experienced advisors, robo technology will create supercharged advice with a personal touch. Advisors can serve more clients more efficiently, but still be available to them if they have a problem.

The Era of Supercharged Advice

Adopting technology to boost efficiency is the best way to meet the robo challenge. Advisors can leverage robo to automate the hassles and manual processes of their business and focus on where they add real value to their clients.

Advisors Add Value Here	Not Here
Behavioral Coaching	Paperwork
Assistance with Taxes	Opening Accounts
Deepening Relationships	Account Transfers & Rollovers
Determining Best Interest	Handling Withdrawals
Empowering Client Goals	Routine Balance Checks

Here are ways that leveraging advisor technology improves practice efficiency and accessibility.

- 1. Automate Account Management** — Opening an account and implementing portfolio recommendations doesn’t have to be a pain the assets. The days of endless paperwork and faxing are over. With the ability to automate the account-opening process, advisors are free to do what they do best—build relationships. Note to advisors: Nitrogen’s One-Click Fiduciary™ technology in Autopilot makes portfolio management simple.
- 2. Streamline Processes** — Robo technology enables advisors to automate tedious processes like filling out paperwork and taking payments, skyrocketing practice efficiency. Even a process like rebalancing portfolios doesn’t have to be a manual task. With new technology, the yellow legal pad becomes a thing of the past.



3. **Increase Your Client Pool** — Automating routine processes with technology gives advisors the bandwidth to take on lower-net-worth clients, profitably serving accounts large and small. According to the Pareto Principle, 80% of one's inputs account for 20% of one's outputs, and vice versa. In the investment world, we've seen that the bottom third to half of an advisor's book of business consumes about 80% of an advisor's time, effort, and resources.
4. **Market Effectively** — With the right technology, an advisor can direct prospective clients to their website to take a risk questionnaire and set up an account with a properly allocated portfolio without any need to personally walk them through. The right technology will notify them when a prospect opens an account or a client makes changes, so the advisor can quickly look it over to make sure everything is still in order.
5. **Elevate a Firm's Brand** — Robo technology should elevate a firm's brand, not confuse it. Technology that is "white labeled" allows a firm to upload its own logo and operate as if the client engagement platform is proprietarily its own. This gives a firm ownership over their brand, their recommendation, and their client relationships.
6. **Lower Costs for Clients** — Because advisors can invest their energy in other places, they don't have to charge their lower-end clients nearly as much as their high-net-worth clients, whose complicated financial situations take much more attention. Advisors spend more time doing high-level work with real value, and their clients pay them to do what only a human advisor can do, while the robo does the rest.
7. **Cultivate Client Ownership** — With robo capabilities, the client can be more involved than ever in the investment process, giving them a feeling of ownership over their investments, which leads to greater understanding and confidence.
8. **Improve Client Experience** — The removal of technical obstacles means that clients will be much happier, leading to a better and more efficient client experience. The ability for clients to access a portal, monitor their investments in real time, and integrate their accounts into a single location, means that the barriers to working with a human advisor are removed.

Sink or Swim: Adopting Technology into Your Practice

While it's unrealistic to expect self-directed robos to steal all business from traditional advisors, the one prediction coming true is that clients expect their advisor to have all the tools that robos offer. The ease and convenience of robo are now considered industry standard, and advisors offering higher fees for fewer features and less convenience are finding themselves on the wrong side of an ACAT form. In a study released by Accenture, 68% of investors across all ages and wealth ranges expressed a desire to have a person to talk to for financial advice, but they also want the convenience of the digital world.^[23]

A Fidelity Advisor Insights study showed that advisors who embrace technology, which they call eAdvisors, have 40% more assets under management and are increasing their geographic reach faster than those who do not use technology. They are also better at attracting Gen X and Gen Y investors, who are expected to receive the biggest wealth transfer in history over the next 30 years.^[24]

The first step advisors can take to lessen the technology gap is to invest in a good website. One survey reported that 80% of high-earning millennials said they had a more positive impression of advisors with a good website.^[25] Looking at the user experience and developing a technology map from there is a good strategy for those that don't know where to start.



Conclusion

The data makes it clear that the threat posed by self-directed robo advisors when they first appeared was short-lived and not as extreme as once thought. What robos were able to do, however, is shine a light on widespread inefficiencies and underrepresented populations in the investing world. Technological advances are an important byproduct of competition, and the intrusion of robo technology forced advisors to upgrade with the times and improve their level of service. Low-net-worth clients, previously ignored by traditional advisors, now have a seat at the investing table because automation makes it possible for advisors to manage them profitably. High-net-worth investors wanting autonomy and convenience on-the-go can stay with their longtime advisor thanks to integrations, client portals, and automatic rebalancing.

The fintech boom that occurred as a result of robo advisors has forced industry-wide improvements on everything from client engagement to portfolio diversification. The hybrid advisor that harnesses these enhancements is able to manage more clients with fewer resources, leaving complicated and manual tasks to the robos best equipped to handle them. "Technology can be an advisor's greatest accomplice," says Aaron Klein. He reports to InvestmentNews, "This is a big distinction between self-directed robos, who are trying to replace advisors, and the type of technology that can automate an advisor's practice and really let them focus on delivering great advice."^[26]

READY TO JOIN THE FEARLESS INVESTING MOVEMENT?

We'd love to show you how 20,000 advisors are empowering fearless investing with the Risk Number.

Take a Personal Tour

[1] <http://www.businessinsider.com/the-robo-advising-report-market-forecasts-key-growth-drivers-and-how-automated-asset-management-will-change-the-advisory-industry-2016-6>

[2] <http://www.bloomberg.com/news/articles/2015-06-18/robo-advisers-to-run-2-trillion-by-2020-if-this-model-is-right>

[3] <https://www.kitces.com/blog/robo-advisor-growth-rates-and-valuations-crashing-from-high-client-acquisition-costs/>

[4] <http://www.businessinsider.com/where-robo-advisor-started-2014-9>

[5] <https://techcrunch.com/2010/10/19/kaching-gets-100m-under-management-and-gets-all-wall-street-with-a-new-name/>

[6] <https://www.betterment.com/resources/inside-betterment/our-story/the-history-of-betterment/>

[7] <https://hbr.org/2015/12/what-is-disruptive-innovation>

[8] <http://www.cnn.com/2015/06/21/millennials-and-robo-advisors-a-match-made-in-heaven.html>

[9] <https://fundersclub.com/blog/2016/11/30/your-money-in-20-years/>

[10] <https://www.cbinsights.com/blog/robo-advisor-global-fintech-map/>

[11] <http://www.financial-planning.com/opinion/it-takes-an-advisor-to-provide-advice>

[12] Morningstar Equity Research <http://bit.ly/2dEvYJv>

[13] <http://investment-advisors.credio.com/l/31372/Betterment>

[14] <http://advisorlearningcenter.com/practice-management/articles-practice-management/robo-advisor-financial-advisor-friend-foe/>

[15] <https://www.blackrock.com/corporate/en-at/literature/whitepaper/viewpoint-digital-investment-advice-september-2016.pdf>

[16] <https://www.ibm.com/watson/financial-services/>

[17] <http://advisorlearningcenter.com/practice-management/articles-practice-management/robo-advisor-financial-advisor-friend-foe/>

[18] <http://www.reuters.com/article/us-futureadvisor-m-a-blackrock-idUSKCN0QV1HU20150826>

[19] "Risk Tolerance Estimation Bias: The Age Effect" Journal of Business and Economics Research, Volume 7, Number 7, July 2009 (<http://krex.k-state.edu/dspace/bitstream/handle/2097/4762/GrableJBER2009.pdf?sequence=1&isAllowed=y>)

[20] "Application of Preference Measurement: The Case of Riskalyze." Fangfei Dong, Dr. David Eil, Dr. Ethan Pew, and Dr. Noah Smith, May 10, 2015. <http://bit.ly/2vxpXed>

[21] <http://www.marketwatch.com/story/hr-block-tax-season-customer-base-rises-38?siteid=yahoo&dist=yahoo>

[22] <https://www.thebalance.com/benefits-of-robo-advisors-1289783>

[23] <https://www.accenture.com/us-en/insight-new-face-wealth-management>

[24] <http://www.fa-mag.com/news/technology-grows-financial-advisors--practices-23687.html>

[25] <http://www.wealthmanagement.com/technology/tech-savvy-advisors-are-outperforming-their-peers>

[26] <http://www.investmentnews.com/section/video?playerType=GadgetGirl&bctid=5214784290001&date=20161117>

About Nitrogen

Nitrogen revolutionized how financial advisors and wealth management firms grow with the launch of Riskalyze in 2011. Today, Nitrogen is the growth platform for wealth management firms, helping advisors turn leads into meetings, meetings into valued clients, and clients into referral champions. The company invented the Risk Number®, built on top of a Nobel Prize-winning academic framework, and is the champion of the Fearless Investing Movement — tens of thousands of financial advisors committed to our mission of empowering the world to invest fearlessly. To learn more, visit NitrogenWealth.com.