Who Will Disrupt Asset Management, and How
by Katina Stefanova, David Teten, and Brent Beardsley. DisruptInvesting.com
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Figure: Picture 1. Current Examples of Disruption in the Investing Industry

"One summer day, probably in the 1870's, friends of a major short-seller got together on the shores of Newport, Rhode Island, where they admired the enormous yachts of New York's richest brokers. After gazing long and thoughtfully at the beautiful boats, the short seller asked wryly, 'Where are the customers' yachts?'"
Jason Zweig, in his introduction to Fred Schwed's 1940's Wall Street classic, "Where Are the Customers' Yachts – A Good Hard Look at Wall Street"

If investors complained about Wall Street 140 years ago, they're howling now.

Asset management is about to go through a particularly dramatic period of disruption, for three reasons. First, the industry is extremely profitable, and excess profit pools attract competition. According to BCG, total 2014 annual industry profits were $102 billion globally, flowing from notably high operating margins of 39%. Second, financial technology venture capital is exploding: CB Insights reports that $19.1b was invested in fintech companies in 2015, vs. $3.9b in 2013. And third, a number of global trends as well as changes unique to the asset management industry are coinciding to force change onto even the most recalcitrant. The technology and social revolution, globalization, the emerging markets' wealth, the increased role of women, and the millennials' changing tastes are an irresistible force meeting a moveable object: traditional asset management industry structure.

When we talk about disruption, we are using the formal definition of Disruptive Innovation popularized by Harvard professor Clay Christensen: "an innovation that helps create a new market and value network, and eventually disrupts an existing market and value network (over a few years or decades), displacing an earlier technology." Examples in asset management include index funds (Vanguard); ETFs (iShares); crowdfunding (AngelList); discount/online brokerages (Charles Schwab); and online wealth management (Wealthfront, Betterment). (See Picture 1).

Traditionally, asset management changes slowly. Of the $280 trillion of investable assets globally, approximately 50% (~$140 trillion) is invested in real estate and cash – which were also the most popular asset classes in the 1800s. The next most popular asset classes are insurance and treasury bonds, which were disruptors in the 1600s.

The Peculiar Asset Management Industry

Asset management is a highly unusual and somewhat baffling industry. We see seven main examples of just how peculiar our industry is, relative to other industries:

1. **The asset management industry collectively plays a near-zero-sum game.** By contrast, most industries are positive sum: if you eat a great steak dinner, it doesn't imply that others have to eat hamburger. In asset management, each new Money Manager that is able to generate Alpha (returns above the passive benchmark performance) normally does so at the expense of other Money Managers who underperform. Your own investment's value may change because of a change in value of the underlying asset and/or market preferences. However, few investors can impact the value of the underlying asset, except for typically private equity and venture capital investors. And only celebrity investors like George Soros can influence market preferences. In fact, it is mathematically impossible for the median investor in a given publicly-traded sector to beat a low-cost index of that sector, after expenses. Money managers playing a positive-sum game include those who focus on well-developed sectors for which indices are not readily available (e.g., private companies, frontier markets) and/or nascent asset classes (e.g.,internet

domain names,lifetime individual income,litigation finance,virtual currencies,cryptocurrencies, divorce loans,receivables,patents, frequent flyer miles, timber, farms/ranches, art, collectibles, orcarbon credits.

2. **The asset management industry rarely delivers the alpha that it promises.** Delivering alpha on a net of fees and costs basis consistently over many years is incredibly difficult. For example, hedge funds on average have underperformed on a net of fees basis in both US equities and bonds since 2000. Hedge fund performance looks attractive for the period of 1970 - 2013 (See Picture 2). However, one can argue that hedge funds were different in the 1980s and 1990s as the industry was smaller and more nimble. Recent hedge fund underperformance, coupled with steep typical 2% management and 20% performance fees and additional hidden costs that can be charged to fund investors, make investors more likely to ask questions.

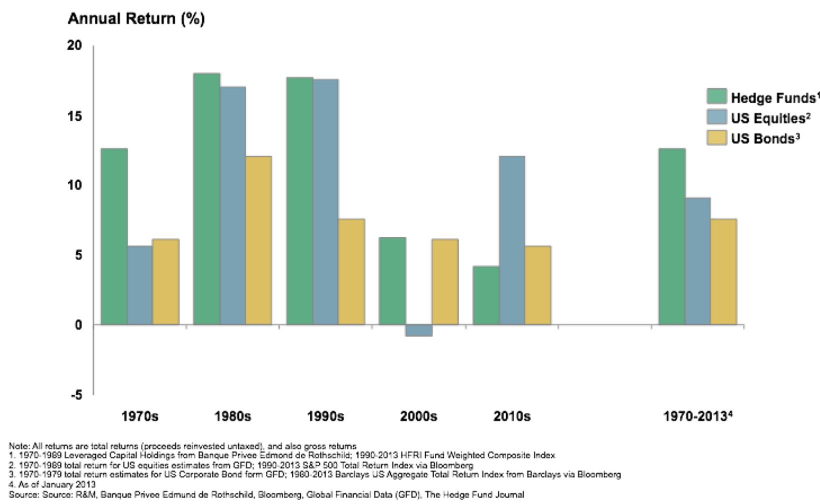
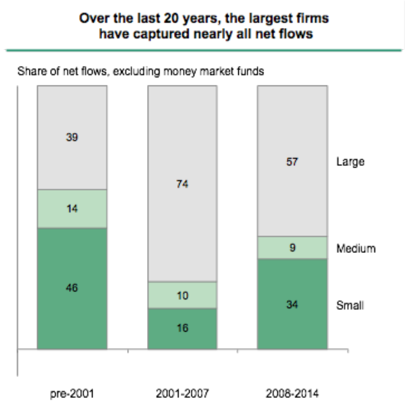


Figure: Picture 2: Relative (Gross & Net) Hedge Fund Performance Over Time [2]

3. **Standard compensation models motivate Money Managers to add more assets under management, but size often hurts returns.** This contributes to the 'winner take all' trend in which we see steadily growing concentration of AUM into the largest money managers (See Picture 3). For example, venture capital funds earn on average two-thirds of their compensation from management fees, not carry. However, there is an inevitable tension between size and returns. Large hedge funds over time hit liquidity limits and start impacting market pricing when they trade, losing their ability to exploit arbitrage opportunities. Similarly, large VCs earn lower returns than small VCs, who in turn earn lower returns than angel investors; angels writing small checks have among the highest returns of any

asset class. Of course, it is true that large size does create certain proprietary advantages, e.g., some large fund of funds negotiate preferential management fees from funds in which they invest.

The largest asset managers capture nearly all net flows into the US market; net flows to other managers are down significantly.



In 2014, top 10 largest firms captured 120% of net flows

Money Manager	2014 net flows ($B)	Cumulative share of total net flows
Vanguard	219	55%
BlackRock	98	80%
Dimensional Fund Advisors	27	87%
TCW	26	93%
Dodge & Cox	26	100%
J P Morgan Chase	25	106%
Goldman Sachs	15	110%
Natixis	15	114%
SSGA	14	117%
TIAA-CREF	13	121%
Total Market	**397**	
2013 ratios		73%

xx: New player in top-10 ranking in 2014, compared to 2013 rankings

Note: Data correspond to US mutual funds excluding MMFs. US mutual funds data include ETFs. Pre-2001 refers to the time period between 1991 and 12/2000. Asset manager size categorization based on 2US AuM: Large (> $BN 250), Medium ($BN 100-250), Small (< $BN 100)
Source: Strategic Insight; BCG analysis

Figure: Picture 3: US Net Cash Flows to Money Managers

4. Money managers can earn more money at less personal risk than in most other industries. Simon Lack reports in The Hedge Fund Mirage that from 1998 to 2010, hedge fund managers earned $379 billion in fees, while their investors earned only $70 billion in investment gains net of fees. In the asset management industry, the norm is that the General Partner puts in just 1-2% of the total assets under management and keeps the remainder of her personal assets in a diversified portfolio. Some hedge fund managers have even set up their own sophisticated family offices specifically to diversify their holdings out of the core product in which they made their wealth. In contrast, entrepreneurs in most other fields risk a significant portion of their own capital in their new venture, better aligning incentives.

5. The financial services industry, including asset management, has disproportionate power to create systemic economic risk. This negative externality is unique to financial services, and was particularly obvious in the 2008 financial crisis. Similarly, when the highly leveraged Long Term Capital Management fund collapsed in the late 1990s, sixteen leading financial institutions had to agree on a $3.6 billion recapitalization (bailout) under the supervision of the Federal Reserve. By comparison, when oil prices doubled between 2009 and 2011, it created stress for some industries but there was no concern that the global economy would collapse.

6. The "broken agency" problem can cost money holders far more than the same problem does in most other industries. All companies face some form of the principal-agent problem: The chief executive of a public company may be tempted to manage financial results to optimize the short term stock price if a significant portion of her compensation comes from company stock options. In asset management, the principal-agent problem is exacerbated by the presence of so many conflicted intermediaries. For example, an individual allocator is often motivated to allocate to the most popular fund or type of investment in which her peers are investing, to protect for career risk. If an allocator hires a known player, underperformance will not cause the employee's judgement to be questioned. The resulting herd mentality hurts innovation and leads to suboptimal returns.

7. The investment management industry is far more homogeneous than the clients it serves, ironically for an industry that worships "diversification" as the one true free lunch. Only 10% of mutual fund AUM and 3% of hedge fund AUM are managed by women, and a similarly small percentage is managed by traditionally underrepresented minorities. This, despite the fact that funds run by women outperform. That outperformance equals the cost of money holder bias. Distributors (e.g., Registered Investment Advisors) also are disproportionately white men of middle age and older. The bias has two other main negative effects. First, it limits investors' understanding of the world. America alone will be a majority minority country by 2040, and inevitably consumption and behavior patterns will evolve accordingly. Second, according to Carol Morley, CEO of the Imprint Group: "It is hard to attract top talent if firms are looking at a small slice of the population and their immediate peer group."

The Macro Trends Forcing Change on Our Industry

Global tectonic shifts - technology revolution, globalization, the increased role of women and millennials and a generational turnover among chief investment officers - are an irresistible force meeting a moveable object: the traditional asset management industry structure. (See Picture 4 for a summary.) Meanwhile, asset management shows the traditional earmarks of an industry ripe for disruption — most obviously, unhappy customers and very profitable incumbents.

Our research suggests the the power base will finally shift to Money Holders from Money Managers. We see four main ways that global economic, social and political trends are driving this massive power shift:

Rapid technology innovation is generally positive for most money holders and will provide an opportunity to differentiate

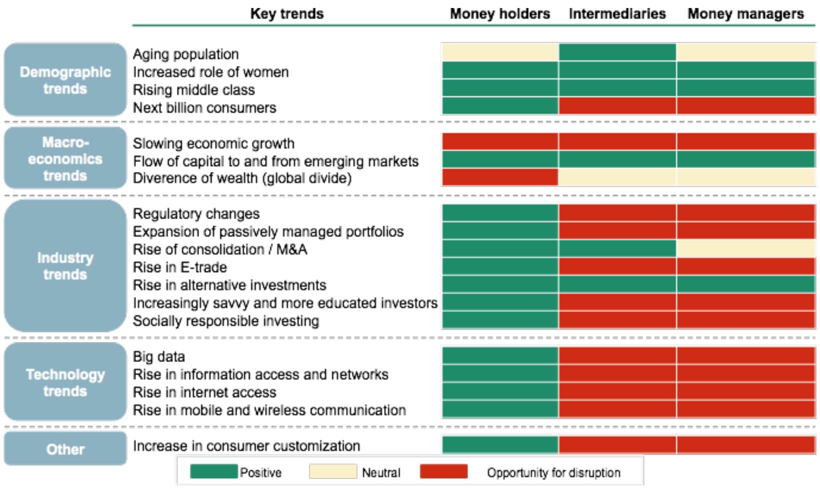


Figure: Picture 4: Macro Trends Impacting Money Management

for intermediaries and money managers. Technology, and specifically the internet, will drive greater transparency, ease of use, and efficiency, while creating new opportunities for funds looking to generate alpha. But technology is neither a panacea nor fault-free, e.g., the 2015 Flash Crash and Bank of New York Mellon's mutual fund settlement problems. Overall, technology will both raise assets and reduce fees, but it will not be a competitive differentiator on its own. Some startups will target upgrading institutions' investing process: consider Earnest Research, which analyzes transaction data and other non-traditional data sets for investment research, and AcordIQ, a platform that institutional investors can use to gain better control and governance of funds they are invested in. Other will target individuals: Long Game is turning gamblers into investors.

A slow growth economy has negative impact on most of the asset management industry and is forcing accountability on money managers. Many of the leading macro investors, including George Soros, Ray Dalio and Vanguard's Chief Economist, Joe Davis, are pessimistic about global growth outlook. One of the biggest implications for asset management is that underfunded pension funds will have a difficult time meeting their return expectations. Another implication is that the large money managers that collected hefty fees from riding the long term "beta" growth wave in the 80s and 90s will have a difficult time justifying "2 and 20" fees in a lackluster economy.

As women and millennials become key allocators, they create a new group of underserved customers with new unmet values and expectations. Womens' $14 trillion in assets today is projected to reach $22 trillion by 2020, according to a Family Wealth Advisors Council white paper. Meanwhile, millennials are coming of age in the work force. The new decision makers will expect the industry to reflect both better gender balance and be more accessible everywhere, and will invest in money managers who do not look like Warren Buffett. Internal diversity forces an organization's members to question their assumptions more aggressively, think more deeply, and are less likely to generate bubbles, according to research by Professor Sheen Levine. Further, these two groups (women and millennials) tend to invest differently than the past generation of older men.According to the Spectrum Group, Millennials, for example, are both more risk-averse and more socially conscious than past generations when selecting investments. In addition, having come of age during the financial crisis, millennials have a negative brand perception of some of the traditionally dominant financial services companies.

Geopolitical risk around the world leads to capital flight to safe havens. Political volatility is typically not good for savers and allocators as it tends to destroy asset value. Regional political instability and the fear of totalitarian regimes exists in China, Russia, the Middle East, and South America, which now have millions of well-educated and newly wealthy citizens that look to protect themselves and their nest eggs. The IMF reports that we are seeing the first net private capital outflows in emerging markets since 1984. For example, according toBloomberg, money is quietly leaving China at the fastest pace in at least a decade: an estimated $300 billion in financial outflows in the six months through March 2015. This is double the capital ($150 billion) that exited Russia prompted by the Ukraine crisis. Overall, the economic outlook in the US is modest, but the country is relatively stable despite political dysfunction, and remains the most attractive on a relative basis. Just as immigrants streamed to Ellis Island, the wealth of the newly prosperous emerging markets will increasingly seek refuge in the United States, as well as other perceived safe havens such as Singapore and Switzerland.

The Money Manager of the Future

Based on the problems and global trends uncovered in our research, we outline below the five characteristics that will differentiate the winning money manager of the future (See Picture 5):

Use technology to rebalance value to investors. Internally, money managers are investing in artificial intelligence and big data capabilities and more seamless integration of front and back office processes. Externally, leaders are building mobile and tablet apps, and expanding their use of social media. In the future, innovative models, especially in the retail space, will integrate investing with elements of social media, interactive gaming and education. For

	Today's Investment Firm	Investment Firm of the Future
Technology	• Correlation models / predictive analytics based on observable historical data	• Data / data mgmt as competitive advantage • Big Data , Artificial Intelligence, Social Media powering investment decisions
Transparency	• Post-crisis regulatory environment focused on the past crisis issues • CIO communicating to clients/regulators	• Regulatory oversight with external boards • Due diligence as a systematic, on-going oversight and governance process
Risk Management	• Asset class silo risk systems with static firm-wide risk systems (e.g., counterparty risk) • Operational risk silo	• Risk based on leading indicators not lagging • Integrated, dynamic risk management across public and private/ illiquid asset classes
Alpha Creation	• Individual security selection → active fund section → asset allocation with passive	• Investment theses expressed across asset classes including public and private / illiquid • Influencing outcomes / activist investing
Culture / Talent	• Focus on cohesive culture • Little real talent management	• Professionalize human capital management – workforce planning, leadership development • Firm leadership as a professional CEO – not part time CIO/Sales

Figure: Picture 5: The Five Characteristics of a Successful Money Manager

institutional investors, technology will enable more proactive risk management and governance.

Create and sustain trust through transparency. As opacity recedes, money holders will see who has been working with their best interest at heart. We foresee the doom of the black box hedge fund model. According to Amanda Tepper, CEO of Chestnut Advisory Group, "investors are increasingly demanding clear, concise and consistent communication from their asset managers. In a recent Chestnut investor survey, 92% of respondents said they view investor communication as integral to an asset manager's mission." In addition to investor demands, money managers must comply with an increasing array of regulatory requirements. That said, regulators have a history of protecting us from the problems of the last crisis, not the next one. As self-protection, we see increasing use of self-regulation. For example, some private investment firms will establish active executive boards similar to public companies, to give money holders and intermediaries comfort that decisions are being made thoughtfully and to create checks and balances on the historically all-powerful or cult CIO. We expect the current largely manual and sporadic due diligence process to be revamped to include more systematic, ongoing oversight and governance.

Manage integrated risk, not risk in separate silos. The traditional view segregates risk into market, credit, and operational and buckets. For example, in the classic org chart, the Investment Officer is responsible for market risk; the Treasury Officer or CFO for counterparty risk; and the COO for operational risk. However, risk is not additive or linear, and often hot spots in one area may cause undetected issues. The money manager of the future will learn to look at risk holistically and pay attention not just to lagging indicators (losses) but to leading indicators (talent retention, investment in infrastructure, succession planning).

Generate new sources of alpha. The preference for alpha generation based on security selection, i.e., "stock picking", has transitioned to alpha generation based on fund manager selection, which has transitioned to alpha generation based on asset allocation - both strategic as well as tactical. The best opportunities for alpha generation at the security and fund level, e.g., special situation or frontier markets, are shrinking over time. We envision that the ability to allocate in an agile way across multiple asset classes will be a differentiator - across both public as well as private / illiquid assets, such as private equity or real estate. We also envision more aggressive use of activist investing, broadly defined. In the world of private equity and venture capital, the equivalent of an activist strategy are those investors with a portfolio acceleration toolkit, typically including experienced operating executives and a set of preferred operational service providers.

Invest in talent and culture as the critical foundation.

> *"If you want to build a ship, don't drum up people to collect wood and don't assign them tasks and work, but rather teach them to long for the endless immensity of the sea." Antoine de Saint-Exupery*

The investment industry is today very immature in its human capital management, with high turnover, minimal succession planning, and a strikingly homogeneous work force. As founders age and investor demographics change, the established investment firms will face atalent crisis and will have to rethink how to attract, develop and retain talent. "Purpose-driven companies," says Jeff Hunter, CEO of Talentism, "are more likely to have employees who exhibit cohesive behavior and act in the best interest of the company and the investors." Thus, we foresee a professional CEO role emerging in asset management: She will be fully focused on leadership as distinct from the traditional CIO and VP of Sales. It's worth noting that some of the leading asset management firms, including D.E. Shaw and Blue Mountain, are leading the way by being very proactive and mindful about managing their culture and principles.

The Jobs To Be Done in Asset Management

Christensen popularized the idea of analyzing a company by looking at the "Jobs to Be Done" needed by its clients. Most money managers think their main job is returns, but they are wrong. According to Amanda Tepper, CEO of Chestnut Advisory Group: "contrary to conventional wisdom, investment performance alone does not drive asset flows. While there is a clear relationship between the two, investment performance accounts for only about 15% of the reason for placing money with managers. We found (very low) correlations between trailing three-year returns (the primary metric most institutional investors follow) and subsequent one-year net capital inflows."

Managers will still have to cover the basics like meeting return expectations at the right risk levels with the proper internal controls (the technical jobs to be done). The true opportunity set, however, lies in connecting deeply with investor needs (their functional and emotional jobs to be done). The winners in asset management need to provide targeted customization at scale (a functional job). See Picture 8 for a summary, and see Appendix 1 for a detailed discussion of the jobs to be done in asset management.

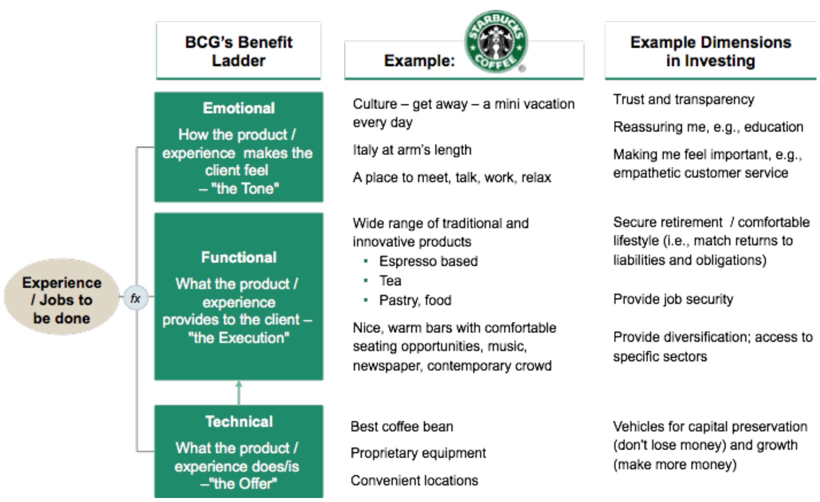


Figure: Picture 8: The Hierarchy of Jobs to be Done

Jobs to be done must incorporate technical, functional, and emotional benefits.

A money manager must do all of the technical jobs at an acceptable level just to get in the game. At a minimum, investors require money managers to be able to deliver risk-adjusted alpha at lower cost. We see possible disruptions where funds are highly leveraged, high volatility and highly concentrated. These funds cannot meet the minimum level of technical proficiency and cannot withstand withdrawals during significant down years. We see the average lifespan of a hedge fund is 5 years; within a three-year period about one-third of hedge funds disappear.

The cookie cutter approach to money management is no longer adequate. Today's investor base is global and diverse along culture, gender and demographic lines driving unique investments needs. As a result, money managers will have to be able to adapt their business models and offer appropriately scaled service levels at the right cost.

Jobs at the emotional level create a deep connection with investors and lead to enduring relationships and improved economics through lower churn for managers and allocators alike. The ability to do the emotional jobs well can transform an asset manager into an institution - likely to scale and to stay in business for the long-term. We have found that customers may not clearly express or even openly admit that they value “emotional jobs” at the same level or higher to well known functional jobs. However, the money managers that perform these jobs well - jobs that may be more “social” or “experiential” - will consistently attract more assets.

- **Customer service is critical for both retail and institutional investors.**

Investors look for money managers with ability to make sense of the cacophony of information and disparate investment advice. Further, they need highly customized and often personalized help to shape their investment strategy, sorting signal from the noise. The high importance money holders place on customer service, therefore, calls into question the viability of technology-only investment platforms and the black box hedge fund model of “give me your money and wait for your annual report.” In the institutional space, Bridgewater has a “bend-over-backwards-for-clients” internal culture. Bridgewater offers both large, highly skilled client service teams and a proprietary analytics team. The client service teams are staffed with professionals capable for being portfolio managers in their own right, while the analytics research is provided to clients at no extra charge. In the retail space, in addition to expertise, investors value empathy in their financial advisors: “An empathetic financial advisor is one who truly listens to clients, ensuring they feel understood and who demonstrate that they care.” Joseph Reilly Jr., a private wealth advisor in Greenwich, Connecticut, says that advising people about money is being “part financial expert, part shrink, part friend and confidant, and part entertainer.”

- **Investors want transparency into what is actually happening with their money.** As the Millennials begin to invest their own funds or become CIOs at asset allocators, they will expect the same “at your fingertips” accessibility to their portfolio that they now have from their Facebook account. Some money managers are beginning to adjust: ARK Invest offers several ETFs with near-real-time exposure of their individual trades. Goldman Sachs recently announced that it will share some of its secret trading sauce with its clients.

Regulatory requirements and painful past experiences in money management (e.g., Madoff and other high profile frauds) have put transparency high on the priority list for institutional investors as well. According to the New York Times, "Earlier this year, a senior executive of the California Public Employees' Retirement System, the country's biggest state pension fund, made a surprising statement: The fund did not know what it was paying some of its Wall Street managers." The investment agreements that institutional investors often give enormous leeway to managers to pass questionable costs on to their investors.. Recently, the Carlyle Group passed on their limited partners the cost of a $115 million settlement of a insider trading lawsuit - clearly a failure of its own internal management. The opacity of these arrangements creates an opportunity for companies such as Vitrio, Novus, and AcordIQ which provide technology platforms to institutional investors for systematic oversight of fund managers. Scott Evans, CIO of the New York City Retirement Systems, one of the largest public pension systems in the US, and other industry leaders are beginning to establish best practices around a revamped due-diligence and ongoing governance process to increase their insight and systematically build transparency in their investment programs.

- **Money holders want to learn how to be better investors:** The under-resourced and often "relatively" underpaid institutional investor, the family office, and the smaller retail investor all find it difficult to keep current with market trends. They may have little understanding of the arms race around esoteric asset packaging rampant on Wall Street, or how high frequency trading actually affects the market. It falls to money managers to educate investors on how new strategies work, although potential conflicts of interest abound. The fastest growing sector in investment research for the last two decades are expert networks, e.g., GLG. These networks displace what some managers considered their investment edge – a proprietary group of expert relationships built up over years in the business. The expert networks offer direct access to experts on any possible category for on-the-fly education. Northern Trust's private wealth practice has built an analytical platform that educates high net worth individuals about designing customizable portfolios specific to their unique circumstances. Both these companies are strengthening the decision-making capabilities of their clients.

- **Investors increasingly desire to put their money where their**

heart is - whether it is based on social consciousness, religious views or a hobby: According to Patrice Viot Coster, COO of AXA Investment Managers Research: "People may want to express openly who they are through their investments: I am what I invest." We do not mean the philanthropic activities of hedge fund billionaires, but the general desire of the average investor to positively impact the world through their investments. Social impact or "green" bonds offer a creative way for investors to invest in companies offering returns linked to achieving certain defined social impacts. Religious institutions (e.g., the Catholic Church and Mormon Church) and religious individuals/family offices look for investments that are compliant with their religious views. For example, consider Omar Bassal, head of asset management for MASIC, a shariah-compliant family office based in Saudi Arabia. He structures investments in public equity, private equity and real estate to comply with Islamic restrictions regarding business activities and interest, among other things. At the hobby end of the spectrum, some investors buy Berkshire Hathaway stock just to get an invitation to their annual meeting. This is also true of those who put money into art, wine, jewelry, antiques, stamps, or even a sports team. These investments are often more for personal utility than financial investments. We see empty nester Baby Boomers in the West and nouveau riche in Russia and China driving up the value of these "passion investments."

That is not to say that all disruptive opportunities exist only in the emotional realm. In the retail space, investors have technical requirements - from wealth transfer to estate planning - that are broadly served by the private wealth managers. Interestingly, we found three specific functional needs that stand out as an underexplored opportunities for emerging disruptors:

- **Retail investors increasingly care about how much money they take home, not the gross return - before taxes & fees - reported on their investment statement.** Poorly managed taxes and transaction costs can kill investment returns. As protection, robo-advisors provide automatic tax loss harvesting to help investors minimize taxes. Some specific investment instruments also aim to minimize taxes, e.g., life insurance for inheritance planning and municipal bonds are tax-advantaged products. An emerging manager, Greenline Partners, offers a risk parity model not common among money managers serving institutions. The Greenline solution focuses on tax minimization by understanding the long term impact of deferring taxes and overlaid with a unique tax loss harvesting methodology.

- **Helping savers apply self discipline is also a simple but effective way to add differentiation.** Just as with losing weight, there is no shortcut to amassing investable assets. Money holders need to start by putting money aside, which requires discipline. There are business models that encourage such discipline, including certain retirement pools, e.g., 401Ks, which charge penalties for early withdrawal. This has two benefits: it allows the money manager responsible for the 401Ks to make long-term investments, and it also increases the likelihood that the retail investor will have more money for retirement. Many advisors automatically withdraw each month an investment allowance from their customers' bank account.
- **Thematic investing takes the guesswork out of the equation:** Traditional investment consultants offer very granular tools to diversify along the investment spectrum. Today, some money managers offer highly targeted funds for money holders who want carefully defined target sector exposure. For example, Motif Investing enables individuals to invest in a given theme (a "motif"), e.g., all stocks that benefit from a theme of the 'connected car'. Investors can effectively custom-design their own fund according to any theme that they believe in. Investors may also look for target exposure to markets that they cannot easily trade, such as frontier markets which may not be open to regular investors. for example, Himalaya Capital offers access to Chinese Equities. Shehzad Janab's Daman Investments hedge fund provides access to the UAE market. These targeted opportunities can, at times, outperform developed markets. However, investors should be prepared to accept local economic risk, political risk, low liquidity and well as lack of diversification within the themes.

At the institutional level, separately managed accounts and special purpose investment vehicles are gaining popularity as two ways to meet allocators technical or functional needs. For this group of investors, often with substantially divergent investment needs, we note two pressing needs:

- **Pension funds and endowments struggle to match liabilities and obligations.** Institutional investors, in particular, do not care about the highest return *per se*, but want assurance that they can meet their financial obligations. This is particularly true for retirees as well as many institutional investors such as pension funds and endowments. This functional need is dominating internal conversations at investors that are working to meet long term obligations. Bond funds, a traditional source of cash flows for asset & liability matching, clearly struggle to offer critical returns in low or near-zero interest rate environments. Alternatively, commercial and multi-family real estate funds, which provide a blend of annual dividend-like payments and opportunity for appreciation at exit, have also become a popular investment for liability matching.

- **Political and "public good" goals rank high on the agenda of government-owned money managers.** Special interests, preservation of power, and economic development goals can all be part of government investor agendas at city, state and federal levels. Such investors may have defined public service goals, e.g., invest in companies in their home state or support minority owned businesses. Similarly, sovereign funds in the Middle East look for ways to invest locally in industries that decrease their dependence on the energy sector. Yet, we see few money managers that specifically target the unique needs of these public or quasi-public managers on these dimensions.

A Call to Action For Both Disruptors and Incumbents

In "The New Dawn of Financial Capitalism," Ashby Monk writes that the standards in the asset management industry have fallen so low that "doing good for investors means not doing anything bad." The storm our industry is experiencing is blowing windows open for disruptors to exploit.

The incumbents that weather these changes most successfully will be the ones that do not just sit back and wait for these disruptions passively, but instead those that identify the trends to which their strengths play best, and actively pursue strategies to turn those imminent disruptions from threats to opportunities.

In our research, four significant opportunities for disruption stand out. In each, we see substantial room for value creation:

1. Despite emerging innovation, retail investors remain the most ill-served group in asset management. Few quality investment opportunities exist for individuals with less than $1 million in net worth, and yet these investors represent a $147 trillion market globally. We see many models focused on this niche, including robo-advisors and social trading firms such as Ayondo, Collective2, EToro, Sprinklebit, Zingals, and Zulutrade. Other emerging disruptors in this space include Artivest and Franklin Square Capital Partners, which offers retail investors direct access to hedge funds which historically individuals could not access. The typical user experience of playing a video game is engaging, addictive, and fun; the typical user experience of investing is not. The financial services industry can do more to learn from the engagement models of the consumer internet space.

2. Incentives need to be better aligned so that more value accrues

to the ultimate beneficiaries, e.g., the retired employees, public servants, and taxpayers. Money holders repeatedly shared that they are willing to pay for true alpha performance. However, they are troubled when they end up paying disproportionate management fees and hidden costs regardless of performance. Under pressure from regulators, Blackstone Group LP recently disclosed that it could collect as much as $20 million annually from investors and companies in one of its buyout funds for services such as healthcare consulting and bulk purchasing. In response, leading public investors including CALPERS and New York State are aiming to uncover the hidden fees in their portfolio by augmenting their due diligence and governance processes. New types of intermediaries and industry consortium can support institutional investors, family offices and retail investors in uncovering the true cost structure in their funds. Ultimately, we believe this will help these allocators make better decisions on who to invest with and for how long. Creating and enforcing an industry-wide set of standards and benchmarks (such as the ILPA standards) will further help.

An even more radical, but common sense idea is to create business models that better align incentives of the money manager with the incentives of the investors. A rare example of such a business model, in an industry where money managers get paid billions even when investors lose money, is Adage Capital. This $23 billion hedge fund pioneered the approach of being paid only for alpha generation, i.e., Adage receives performance fees when they outperform the benchmark, and return money to investors when they miss the mark.

3. Helping the significantly underfunded US pension funds, who are unlikely to close their asset and liability gap, may require wrenching political reform. Liability matching is a forefront concern for both the $12 trillion defined benefit (DB) pension system and the US government. The IMF has warned that the drastic underfunding of US pension funds poses systemic risk to the global economy. At the opposite end of the spectrum, the emergence of defined contribution (DC) plans have shifted the market risk from the corporation to the individual, and simultaneously led to some uncomfortable questions to be asked about the quality of investment options available in corporate 401k plans, for example. An emerging pain point is balancing the needs of employees in one firm benefiting from a DB plan vs. those on a DC plan, without making either side feel disadvantaged.

A unique opportunity exists to help pension funds manage Defined Benefit and Defined Contribution plans simultaneously for the employees of one given employer, with consistent transparency and governance, as the industry evolves from the former to the latter.

Some of the leading administrators are aiming to develop such an integrated platform.

4. A mass transition to a new generation of managers needs to happen without disruption to the system. The money manager owner class is disproportionately near retirement age. According to Imprint Group, "one third of assets currently managed are managed by men over the age of 60". This creates a challenge in talent retention (because junior people see their path blocked); succession planning (when their path eventually gets unblocked); and eventually in business continuity. For example, Chris Shumway's botched transition out of his hedge fund lead to huge simultaneous redemptions, followed by fire sales, and eventually the closure of an highly successful $8 billion hedge fund. In some instances, audit and risk oversight companies and technologies that help limited partners monitor founder partner departure risk can add value. But in many cases, they are monitoring stasis without understanding the internal leadership dynamics that will make or break these sensitive discussions.

Emerging money managers that can scale and innovate to provide the full spectrum of "jobs to be done" - technical, functional *and* emotional - will thrive in the future. These managers will not only embrace the professionalization of their own management teams, their economics will also benefit from capital fleeing managers who failed in their leadership challenges, particularly succession planning. The failure of Castle Harlan - a private equity firm with a 28 year track record - to transition its leadership economics exemplifies the risk of botched talent management. There is an emerging niche of service providers which help existing money managers grow their own leadership capacity and effectively manage the transition to a new generation of leaders. These management skills, the firms that develop them, and the firms that embrace them throughout their culture will be much in demand going forward.

Terminology

Appendix 1: Full List of The Jobs to Be Done in Asset Management

Technical Jobs to be Done

A Money Manager must do all of the functional Jobs below at an acceptable level just to be in business. The bare minimum Functional Jobs investors required from Money Managers is to optimize the risk adjusted return or the Sharpe ratio of the investment. Thus investing is a constant trade off between "make more money" and "do not lose money."

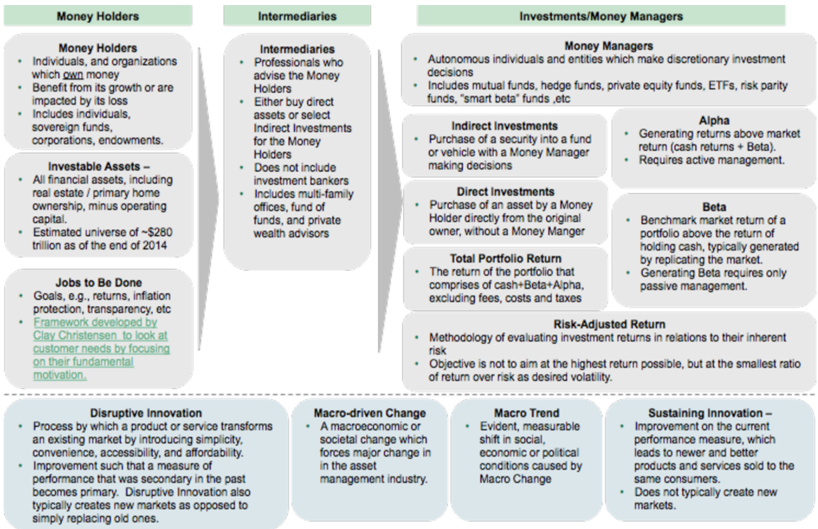


Figure: Picture 10. Defined Terms

Don't lose money. As Daniel Kahneman documents in*Thinking Fast and Slow*, people hate to lose money more than they care about making money. Even aside from the emotion, some institutional investors and many individuals (e.g., those close to retirement) have a structural imperative to hate losses more than they value gains. Sophisticated Money Holders understand that sometimes they are going to lose money. However, they expect Money Managers to have clear reasons and to perform within the expectations of their investment strategy, as well as to make money overall over time. Smart Money Managers address this need by focusing on risk adjusted return offerings, and articulating the tradeoff between risk and returns. For example, Bridgewater's Pure Alpha strategies allows investors to select different volatility levels based on their risk preference. Goldman Sachs Asset Management and Pacific Investment Management Company, LLC offer similar strategies. Exceed Investments offers a set of index funds whose market differentiation is a structure to minimize the odds of a loss beyond a defined limit.

An example of a vulnerable category of funds which does not do this Job well: Highly leveraged, high volatility, high concentration hedge funds, which cannot withstand withdrawals during significant down years. The average lifespan of a hedge fund is5 years; within a three-year period about one-third of hedge funds disappear.

Make more money. Some investors look to optimize for highest returns above all over time. These are typically ultra high net worth individuals or sovereign wealth funds that can tolerate volatility for long periods of time. Such investors might invest in the most nascent of asset classes, e.g.,internet domain names,lifetime individual income,litigation finance,virtual currencies,cryptocurrencies,receivables,patents,frequent flyer miles, timber, farms/ranches, art, collectibles, orcarbon credits. Fund managers that optimize for high returns over other Jobs include activist investors such Bill Ackman at Pershing Square and Bruce Berkowitz at Fairholme Funds. At a Boys & Girls Harbor Investment Conference, Bill Ackman and Ray Dalio debated the merits of each other's strategies; Dalio warned that Ackman's investment strategy poses "risk of ruin". Warren Buffett's value-focused Berkshire Hathaway also optimizes for returns, and may accept as a result short term underperformance.

Particularly in their earlier years, all of these investors offered relatively poor diversification. Ackman, Berkowitz, and Buffett would all argue that there exist great stock pickers who can beat the market, but such investors only have a few good ideas per year, so therefore they should make only a few trades per year.

Similarly, angel investing is the highest-returning asset class we're aware of, with median returns of18% to 54% across 12 academic studies, but offers very poor liquidity, transparency, and predictability.

Thus to get highest returns, Money Holders have to tolerate likely short term volatility, lack of liquidity, and/or lack of diversification.

Charge minimum fees and expenses. Recent Money Manager underperformance, the low growth economic environment, and underfunded pension funds all force Money Holders to pay more attention to fees. Vanguard is the role model and king of the low expense Money Manager industry, both because of their focus on indices which require minimal research, and their highly unusual status as a Money Manager which isowned by its own funds. ETFs (BlackRock iShares) are another way to dramatically lower expenses. Discount brokers likeCharles Schwab andTD Ameritrade were disruptive in their day to full service brokers; many believe robo-advisors are the modern equivalent.

There is room for new businesses that shed light on the true costs and expenses of fund management. While hedge fund and private equity funds typically report management fees and performance fees, there is little transparency around other fees charged to funds such as legal, compliance, entertainment, custodian, and even middle office, which can add up to up 100 basis points. Companies such asAcordIQ, Addepar, Novus, and Vitriohelp aggregate and expose the costs embedded in a fund as part of holistic portfolio governance.

Functional Jobs to be Done

Certain Money Holders have unique needs which create windows for new business models to emerge.

Protect my job security. "No one ever got fired for buying IBM." Institutional investors tend to cluster-invest in the same large funds, even though manystudies show that small funds consistently outperform large funds. This could be because allocators all want access to the best funds. On the other hand, it could be argued that there is less career risk if allocators follow the crowd and invest in the same funds their peers select;career risk is one of the biggest enemies of alpha.

Inflation protection. Today we live in a low inflation environment and some economists argue that we are entering a deflationary period. However, that was not always the case, and unlikely to be always the case. Inflation-linked (IL) bonds, real estate, and commodities provide an inflation hedge. In some markets used to high inflation such asChina and India, Money Holders choose to put a significant portion of their wealth into gold. Notably, the demand for gold in India and China is also driven by cultural preferences as well; see Experiential Needs below.

Provide diversification. The ultimate diversification is to own an index of the entire market, but of course then tautologically you will only get market returns. The traditional diversified portfolio is the 60%/40% equities bond mix. Alternatively the risk parity model is a typically passively managed portfolio that performs well in most (but not all) economic environments - growth, inflation and deflation. A number of funds offer such an option: The institutional market is dominated by Bridgewater's All Weather (~$90bln), AQR Risk Parity fund (~$25bln) and Invesco Balanced Risk Allocation (~$20bln); Greenline Partners' Tax Efficient Risk Balanced approach is an emerging manager in the family office space. However, investors need to think about diversification holistically beyond just investing in public markets, i.e., how to incorporate venture capital and real estate or even art in their portfolio. We see few solutions in the marketplace that allow for true diversification across both public and private markets.

Minimize taxes. Life insurance is a tax-protected way to protect your heirs' interests. Puerto Rico marketed its bonds as "triple tax free" (exempt from federal, state and local income taxes), which made them very attractive, until Puerto Rico admitted they could not actually pay them off. Greenline Partners offers a risk parity model, not common among Money Managers serving institutions, which focuses on tax minimization by understanding the long term impact of deferring taxes and overlaid with a unique tax loss harvesting methodology. Some robo-advisors provide automatic tax loss harvesting to help investors minimize taxes as well.

Provide access to specific sectors. Traditional investment consultants offer very granular tools to diversify along your axis of choice. Some Money Managers offer highly targeted funds for

Money Holders who want carefully defined target sector exposure. For example,Motif Investing enables individuals to invest in a given theme (a "motif"), e.g., all stocks that benefit from a theme of the 'connected car'. Investors can effectively custom-design their own fund according to any theme that they believe in. Investors may also look for target exposure to markets that they cannot easily trade, such as frontier markets which may not be open to regular investors. SoHimalaya Capital offers access to Chinese Equities, and Shehzad Janab'sDaman Investments hedge fund provides access to the UAE market. These targeted opportunities can at times hugely outperform developed markets. However, investors should be prepared to accept both local economic as well as political risk as well as lack of diversification.

Match returns to liabilities and obligations. Often Money Holders do not care about the highest return *per se*, but want assurance that they can meet their financial obligations. This is particularly true for retirees as well as many institutional investors such as pension funds and endowments. If you invest in dividend funds, utilities, bonds, or many types of rental real estate, you know with (relatively high) confidence that you will get predictable incoming cash payments. For example, two of the biggest municipal bond funds which provide predictable, tax-free income are T. Rowe Price Tax Free High Yield Fund and American High Income Municipal Bond Fund. Bond funds, however, in a low interest environment provide low returns and often do not match investor liabilities. Alternatively, commercial and multi-family real estate funds, which provide a blend of annual dividend-like payment and opportunity for appreciation at exit, have also become a popular investment for liability matching.

Achieve political goals. Many public Money Holders have defined public service goals, e.g., invest in companies in their home state. Similarly, most sovereign funds look for way to invest in economic development in their local economy. We see a few Money Managers that specifically target the unique needs of sovereign funds creating customized investment strategies.

Self-discipline. Just as with losing weight, there is no shortcut to success in investing. Money Holders need to start by putting money aside, which requires discipline. There are business models that encourage such discipline, including certain retirement pools, e.g., 401Ks, which charge penalties for early withdrawal. This has two benefits: it allows the Money Manager responsible for the 401Ks to make long-term investments, and it also increases the likelihood that the retail investor will have more money for retirement. Many advisors automatically withdraw each month an investment allowance from their customers' bank account.

Major catastrophe protection. A non-trivial percentage of investors want toprotect themselves in the event of major economic dislocation. They might invest in a backup luxury second home, ideally in a place like Vancouver; Canada is a stable country with rule of law and low vulnerability to climate change. Portable wealth (gold, jewelry, diamonds) allows you to cross borders easily in the event of social turmoil. Certain local businesses (e.g., a restaurant or farm) can provide income even in the midst of turmoil. Mormons keep a twelve-month supply of food and essentials in their basement as insurance. We are not aware of a financial product offering that addresses this unique need more systematically. Catastrophe insurance (e.g., flood insurance) provides protection against narrowly defined protections. However, in the event ofThe End of the World As We Know It (the disaster prepper's worst-case scenario), traditional financial services providers will probably not be reliable.

Emotional Jobs to Be Done

While performing the functional Jobs is the bare minimum requirement for a Money Manager, and special purpose Jobs target specific customers, Jobs at the emotional, experiential and social level create a deep connection with clients and lead to "sticky" relationships. The ability to do these Jobs well marks those firms which are likely to stay in business for the long-term. According to Amanda Tepper, CEO ofChestnut Advisory Group: "contrary to conventional wisdom, investment performance alone does not drive asset flows. While there is a clear relationship between the two, investment performance accounts for only about 15% of the reason for placing money with managers. We found correlations between trailing three-year returns (the primary metric most institutional investors follow) and subsequent one-year net capital inflows ranging from only 0.24 among small and mid-cap equity managers to just 0.04 for Global Fixed Income managers. "

We have found that customers may not clearly express or even openly admit that they value Emotional, Experiential and Social Jobs in some cases higher or as high as the functional Jobs. However, the Money Managers that perform these experience and social Jobs well consistently attract more assets.

Customer service. Customer service is important for both retail and institutional investors. In the retail space, in addition to expertise, investors value empathy in their financial advisors:"An empathetic financial advisor is one who truly listens to clients, ensuring they feel understood and who demonstrate that they care." One expert in private wealth management says that advising people about money is being "part financial expert, part shrink, part friend and confidant, and part entertainer."

In the institutional space, hedge fundBridgewater has a bend-over-backwards-for-clients internal culture; a large client service department staffed with investment level professionals; and its own analytics team whose research and advice is provided to clients at no extra charge. Additionally, ability and availability to provide insight into "how the world works" from an investment perspective earns Bridgewater loyal long-term investors. The high importance Money Holders place on customer service calls into question the viability of technology-only investment platforms (like robo-advisors) and the black box hedge fund model of "give me your money and wait for your annual report."

Transparency. ARK Invest offers several ETFs with near-real-time exposure of their individual trades. Goldman Sachs recently announced that it will share some of itssecret sauce with its clients.

One of the current problems that institutional investors face is lack of adequate transparency and control of all costs charged by manager, which was dramatized by the Madoff fraud. According to theNew York Times, "Earlier this year, a senior executive of the California Public Employees' Retirement System, the country's biggest state pension fund, made a surprising statement: The fund did not know what it was paying some of its Wall Street managers." The investment agreements that institutional investors sign often give a lot of leeway to managers to pass questionable costs to the LPs. Recently, the Carlyle group passed on their limited partners (LPs) the cost ofa $115 million settlement of a insider trading lawsuit. This create an opportunity for companies such asVitrio,Novus, andAcordIQ which provide a technology platform to institutional investors for systematic oversight of fund managers. Some industry champions, such as Scott Evens, CIO of one of the largest public pension fund, New York City Retirement Systems, are leading the way to establishing best practices around a revamped due-diligence and governance process.

Education. The fastest growing sector in investment research for the last two decades are expert networks, e.g., GLG. They slice out what many analysts traditionally considered their investment edge – a proprietary group of expert relationships built up over years in the business - and offers direct access to experts on any possible category, for on-the-fly education.

There is no ongoing education requirement for many professional allocators, and most HNW private investors and retail investors have little to no education in contemporary investing, observes Joseph Reilly, a family office consultant in Greenwich, Connecticut. This aspect of asset management often gets lip service, but it is essential to retaining clients. The smaller investor, and even large family offices, cannot possibly keep current with the changes in the way the markets are traded. They have very little understanding of the arms race around esoteric asset packaging that runs rampant on the Street, or how high frequency trading actually affects the market. It falls to Money Managers to educate their clients on how new strategies work, despite their clear conflict of interest. This goes for professional allocators as well, many of whom think portfolio management started with Markowitz and ends with Swensen. Recognizing good change from simply more risk is the Job of education. One of the secrets of Bridgewater's growth to be the world's largest hedge funds is their enormous investment in what is effectively free consulting for their clients.

Social welfare. Millennials and women – both growing forces in the pool of Money Holders – are more likely than their past generations and men in general to value doing good in addition to doing well. According to Patrice Viot Coster, COO of AXA Investment Managers Research: "People may want to express openly who they are through their investments: I am what I invest." We do not mean the philanthropic activities of hedge fund billionaires, but the general desire of the average investor to positively impact the world through their investments. Social impact or "green" bonds offer a creative way for investors to invest in companies offering returns linked to achieving certain defined social impacts. Numerous "double-bottom-line" socially responsible investors promise Money Holders the option of earning high returns while they achieve certain socially desirable goals. Generation Investment Management (co-founded by former Vice President Al Gore) has over $7B under management, and differentiates from competition in large part based on their focus on "sustainability research". According toCambridge Associates, private impact investment funds – specifically private equity and venture capital funds – that pursue social impact objectives have recorded financial returns in line with a comparative universe of funds that only pursue financial returns.

Religious beliefs. Religious institutions (e.g., the Catholic Church and Mormon Church), observant individuals, and some family offices look for investments that are compliant with their religious views. For example, consider Omar Bassal, head of asset management forMASIC, a shariah-compliant family office based in Saudi Arabia. He structures investments in public equity, private equity and real estate to comply with Islamic restrictions regarding business activities and interest, among other things. Omar sees "a shortage of investment funds that are specifically designed for investors that want to invest in a way that is consistent with Sharia laws." Shariah-Compliant funds are prohibited from investing in companies which derive income from the sales of alcohol, pork products, pornography, gambling, military equipment or weapons. Additionally, Shariah compliant funds cannot employ conventional leverage or sell shares short. Instead of investing in bonds, notes, T-bills and other conventional fixed income products, Shariah compliant investors favor trade finance funds, leasing funds and Sukuks (income-generating asset backed pools) which provide a substitute for the portion of investors' portfolios that carries less risk than equity markets and provides yield.

Access to networks, e.g., celebrity investors. Some investors buy Berkshire Hathaway stock just to get an invitation to their annual meeting. In public markets, value investors puzzle at the valuations Elon Musk's companies,Tesla andSolarCity, command and attribute that partially to Musk's star appeal. Some VCs choose to invest in a company in part to build a stronger relationship with existing prominent VC investors. Also, in venture capital, companies that have raised money from celebrities often attract people eager to put money in just to have a shot at rubbing shoulders with the glitterati. STAR Angel Network formalizes this by offering membership exclusively to athletes and celebrities. Star athlete Torii Hunter and Wall Street Veteran Ed Butowsky formed the exclusiveClubhouse Investment Club for the same reason: the founders hope that Hollywood and sports celebrity members' access to social media will contribute to stronger performance of their investments.

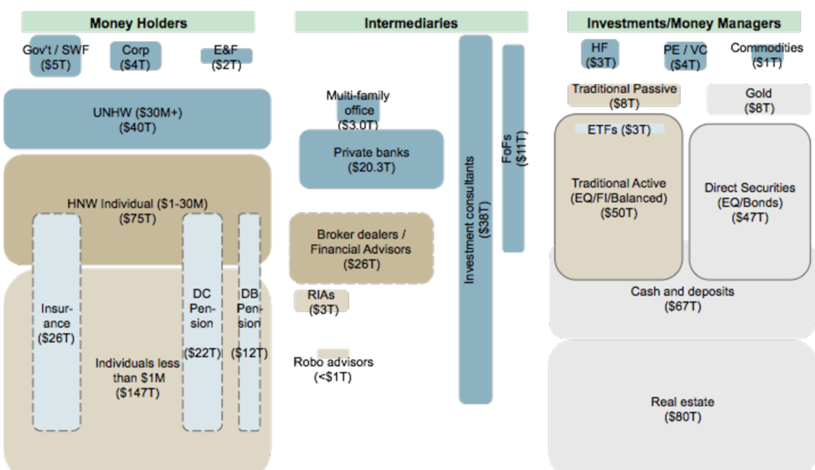
Personal use and passion. Some investors put money into art, wine, jewelry, antiques, stamps, or even a sports team, more for personal use than as a financial investment. Baby boomers in the west, who have paid their mortgage and put their children through college, as well as the *nouveau riche* in Russia and China, are driving the value of "passion investments" up.

Many investors put money into equity crowdfunding sites (AngelList,CircleUp,FundersClub,OurCrowd,SeedInvest, etc.) and product crowdfunding sites (Indiegogo) because of the excitement and ego gratification of investing in a small, unknown, exciting startup company. The same is true for individual angel investments made by retired business people who enjoy continued engagement and the energy of small start ups. The hope of a financial payout is not the only motivator for these angels who also invest their personal time and experience. One such angel shared that he invests in all the startups his buddies put money into, because he does not want to be the only one left out at the local bar who is not toasting to the one startup they invested in with a 20X return.

Coolness and exclusivity. The best example of this is Bernie Madoff. He was a fantastic salesman and would be one of the world's best Money Managers, if not for the unfortunate fact that he was a fraud. He persuaded his clients that he had only limited capacity, and was only able to let in his friends/contacts as investors. His perceived "exclusivity" made investing in his firm all the more attractive. Certain investorsprefer to allocate in "cool", "selective", hedge funds, as opposed to boring mutual funds, precisely because hedge funds are not broadly marketed to the *hoi polloi*. Similarly, in the past few years actors and professional athletes (neither historically groups known for investing acumen) have been piling into seed-stage technology investing because it's seen as "cool".

Appendix 2: The Universe of Investable Assets

To frame our analysis and understand where disruption has happened in the past, we analyzed the global flow of assets from money holders, to intermediaries (advisors), and on to money managers. Collectively, we call this the universe of investable assets, which totals today roughly $280 trillion:



[1]Includes hedge funds, private equity, real estate, infrastructure, and commodity funds. [2]Includes equity specialties (foreign, global, emerging markets, small and mid caps, sectors) and fixed-income specialties (credit, emerging markets, global, high yield, and convertible). [3]Includes absolute-return, target dated, global asset-allocation, flexible, income, and volatility funds; liability-driven investments; and multiasset and traditional balanced products. [4]Includes active domestic large-cap equity, active government fixed income, money market, and structured products.
Sources: BCG GAM Market Sizing 2015; BCG GAM Benchmarking 2015; ICI; Preqin; HFR; Strategic Insight; BlackRock ETP report; IMA; OECD; Towers Watson; P&I; Lipper; BCG analysis.

Figure: Picture 6. The $280 Trillion Global Universe of Investable Assets

The value of the universe of investable assets has increased over time, fueled fundamentally by population growth (which typically expands the value of the underlying corporations) and economic growth. This type of growth is also referred to as beta return or the above-cash market return. To benefit from such returns, investors do not require much investment acumen other than smart diversification.

The relative size of each pool changes over time due to investor preferences, which is driven by growth expectations, risk perceptions, total available liquidity, and investors' idiosyncratic views. For example, one of the best examples of disruption is the low cost index fund movement, pre-eminently Vanguard. As a result of the sector's growth, the proportion of assets managed by money managers in traditional active core asset classes has shrunk dramatically from nearly 60% of assets in 2003 to less than 40% today. This will likely accelerate, as net flows into traditional active core asset classes are negative (See Picture 7).

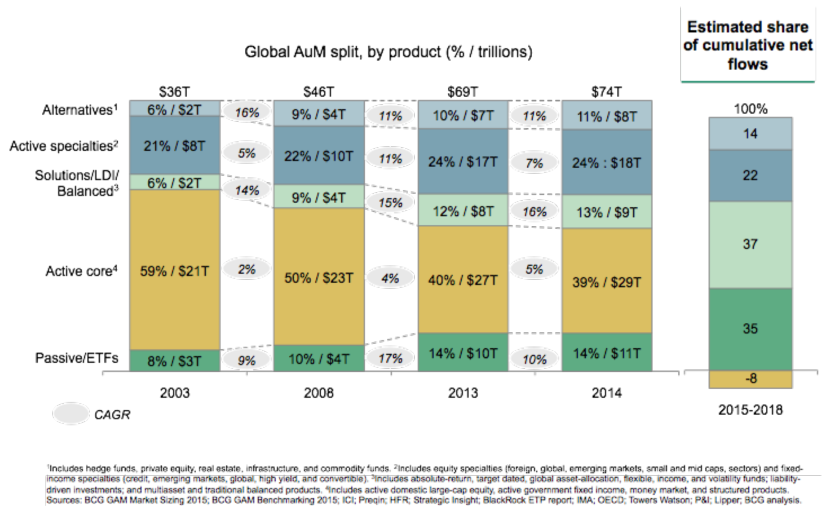


Figure: Picture 7: Passives and Specialties Continue to Win a Disproportionate Share of Net Flows.

Even low-cost retail advisors like Charles Schwab, Fidelity, and Vanguard are not immune to pressure from the yet lower cost robo-advisors. Change is happening so fast that disruptors are now potentially being disrupted. In a tepidglobal economy, money holders worry more about minimizing costs, taxes, and fees, rather than unpredictable top-line returns. Schwab is looking to take market share from traditional wealth managers and full service brokers, while Wealthfront works on snaring Merrill Lynch clients. Meanwhile, Alibaba and other social media giants are busy working to capture Schwab's business. (See Picture 1). As of June 2015, Alibaba had amassed over $115 billion in assets under management in just two years.

Global Investable Assets Assumptions

To estimate global Investable Assets, we made the following assumptions:

- Defined the universe of Investable Assets (See Terminology) as all financial capital available for investment in the world economy, less operating capital, i.e., less the resources the world economy needs to function on an ongoing basis.
- Defined Money Holders as the original owners of the Investable

Assets, who have the most to gain or lose from the appreciation or depreciation of the investment.

- Ignore in this definition government-owned commercial assets, which amount to approximately $75 trillion in value, and are a largely opaque asset class not fully driven by market forces.
- Included real estate and specifically the purchase of primary homes, which can technically be both considered working capital or investment. Owning a house is not only a operating need, but also a form of investment and a store of wealth for the majority of Money Holders, especially those with less than $1 million in net worth.
- Categorized insurance and pensions as Money Holders, although the policies belong to individuals and they are in fact a hybrid group that can be considered also part of Intermediaries.
- Excluded leverage as part of asset manager AUM, although leverage acts like an accelerator that increased return at higher volatility. For a comprehensive study of the impact of leverage, which currently stands at the formidable number of $200 trillion, we recommend reading Global Debt and (Not Much) Deleveraging, from McKinsey & Co.

Disclaimers and Disclosures

The opinions expressed herein are only those of the authors individually, and do not represent the views of any of their employers or of any other institution with which they are affiliated.

Katina Stefanova is an investor in AcordIQ and Long Game; is a former Bridgewater Senior Executive; and continues to have financial interests in Bridgewater.

David Teten has a financial interest in Addepar, Earnest Research, and Indiegogo.

Brent Beardsley has been a consultant in the past and possibly in the future to some of the leading global financial services institutions mentioned above.

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John Casey, Chairman of CaseyQuirk

Mary Cahill, CIO of Emory

Charles Dooley, CEO of AcordIQ

Greg Durst, COO of Marto Capital, former Endeavour, CEO of Africa

Grant Easterbrook, Co-founder, Dream Forward Financial

Charles “Charley” D. Ellis, Founder, Greenwich Associates

Scott Evens, CIO of New York Pension System

Steven Fradkin, President, Wealth Management, Northern Trust

Jeff Hunter, CEO and Founder of Talentism

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