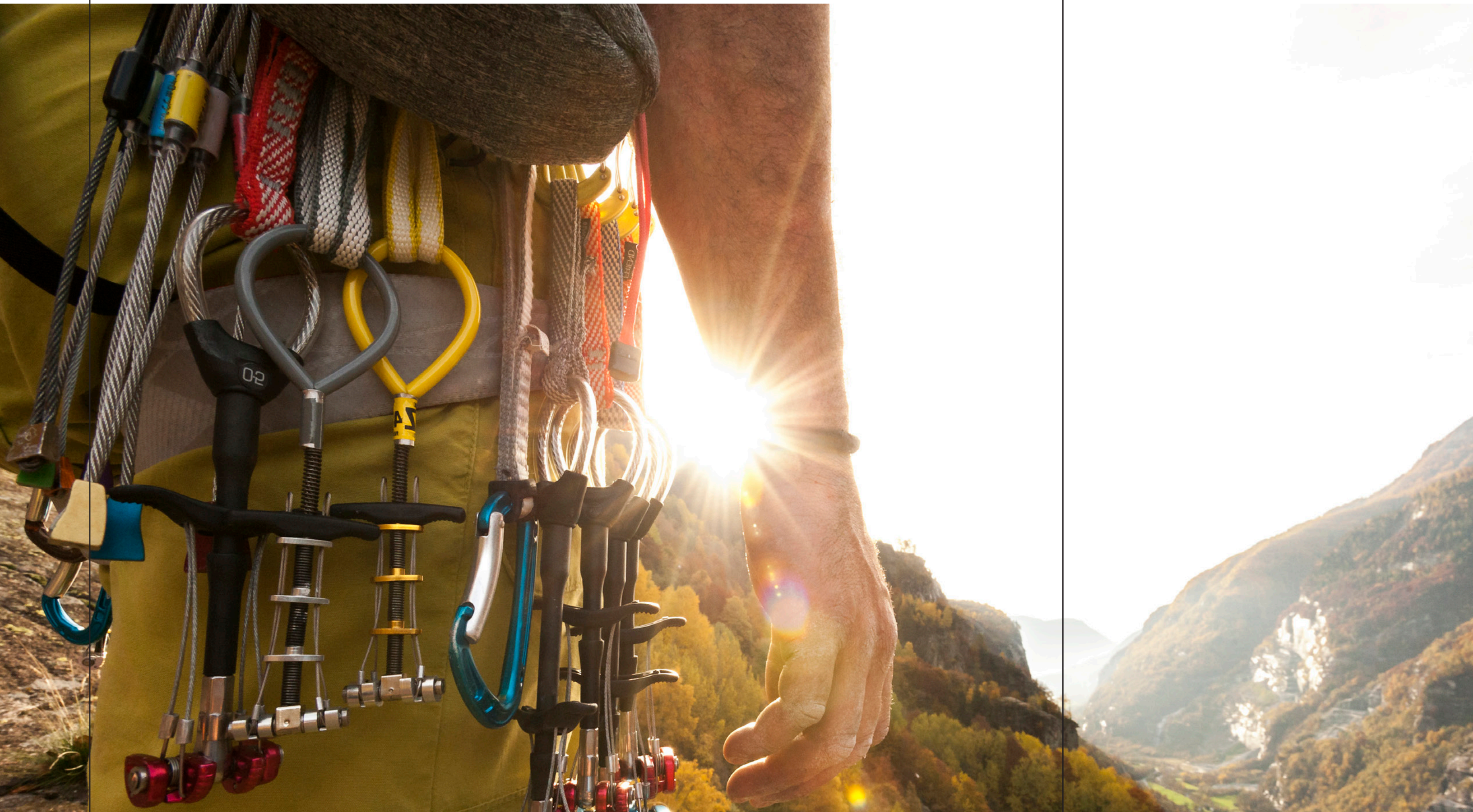
William Blair

May 2017
Market Update
Perspective Global Equity

Adding Science to the Art of Active Management

Ken McAtamney, Partner
Portfolio Manager

Traditional active asset management firms—long-only, fundamentally-driven stock-pickers—are facing a crisis of relevance as the shift from active to passive picks up. One reason may be that asset managers have not evolved enough. In this paper, I explain why I believe adding more science to the art of investing by employing a state-of-the-art investment process that incorporates the appropriate data-analysis tools is key to this endeavor.



As the shift from active to passive investing in the discretionary equity space has continued to accelerate it has become evident that traditional active asset management firms—i.e. long-only, fundamentally-driven stock-pickers—are facing a serious crisis of relevance, and William Blair is among those at risk of being disrupted.

One reason for the shift from active to passive is that, collectively, traditional active asset managers have fallen short of investor expectations in failing to deliver risk-adjusted, net-of-fee performance.

Why have active managers disappointed? It could be that there has been too much supply chasing too little alpha. If so, this is likely cyclical, although the cycle could be long. But perhaps there is a more enduring reason, which is that the world has changed while many traditional managers, proudly clinging to their artisanal approach, have not been able to adapt to the changing dynamics.

For decades, the identification and collection of information was almost as important as the analysis of that information. Managers skilled in the former area could exploit that skill to seek superior investment performance. Recently, regulatory changes and technological advances have shifted the paradigm. Access to timely information is now ubiquitous and free—in a word, commoditized. This in turn has created new challenges, highlighting the human limitations of processing so much information in a conventional analog fashion.

To quote Google/Alphabet CEO Eric Schmidt, "From the dawn of civilization to 2003, five exabytes of data were created. The same amount was created in the last two days."

I believe most traditional active managers have yet to adjust to this new reality and need to add more "science" to the "art" of investing to harness the new challenges.

While human judgment and decision-making will always be relevant to an asset manager's success, merely trusting your money to the smartest guy in the room may not be the most sustainable model going forward; the smartest guy in the room can certainly benefit from a state-of-the-art investment process that incorporates the technologically-advanced tools and analytics.

After all, hasn't technology been able to enhance outcomes in almost every other endeavor? Why do active managers seem so reluctant to change? With apologies to Harvard Business School Professor Clayton Christensen, one of the foremost authorities on disruptive innovation, perhaps incumbency leaves too much at stake—so much so that one is not willing to take on the risk of innovation and evolution.

Industry Observations and Opportunities

Technology is crucial to the future of active management. It is therefore important to understand if the industry is investing sufficiently and if resources are allocated to the appropriate areas.

According to Gartner and *Institutional Investor,* the investment management industry spends two times the global industry average on information technology (IT), about 8% to 9% of revenue (versus 3% to 4% for the global average).

Digging deeper, the breakdown of spending shows that the majority of asset managers' technology spending (50% to 70%) is focused on middle- and back-office operations, which we could qualify as necessary or "defensive spending."

Approximately 10% to 30% of spending is focused on client-related activities, but this varies greatly depending on the manager business model (e.g., retail vs. institutional).

The balance of 10% to 30% is spent on the front end or actual investment process (and, of that, one-fourth is for market data, which is not really technology!). This "offensive spending" has been receiving attention from some pockets of the industry, such as quantitative managers, but in aggregate it has lagged compared to defensive areas.

Looking at the evolution and outlook for IT spending in the different categories, it seems clear that "defensive spending," while high (and poised to remain so), has likely reached a stable level. Most of the infrastructure is now in place, and cost savings have been achieved, even if technological improvement will continue to enhance outcomes. (Perhaps in the future blockchain will disrupt post-trade processing and settlements, but that is a topic for another day).

Client-related spending has evolved gradually from integrated billing and reporting tools to more sophisticated customer relationship management (CRM) systems to services. This area should continue to attract a growing share of spending aiming at further enhancing customer experience and engagement.

But front office, or investment-related spending has broadly been neglected by traditional active managers compared to other areas. (Perhaps that is part of the reason our industry has fared so poorly). Moreover, investment in front office has largely focused on risk-management systems (especially post-global financial crisis) and other non-alpha-generating areas such as compensation and benefits.

In my opinion, the most significant opportunity in investment-related spending is in technologies designed to enhance the existing fundamental stock-selection process, slowly moving away from using technology to access data to incorporating more advanced analytics focused on investment decision-making and alpha generation.

> **"We started a decade ago, building a custom-made research and portfolio-construction software platform to reflect our existing investment process."**
>
> — Ken McAtamney

> **Once a research and portfolio-construction software platform is in place and supported, more advanced tools can be introduced to enhance investment outcomes.”**
>
> — Ken McAtamney

Industry consultant Boston Consulting Group stated in a recent report on the outlook for the Asset Management Industry, *Global Asset Management 2016: Doubling Down on Data*, “It will become increasingly clear that competence in advanced data and analytics will define competitive advantage in the industry in the not-too-distant future.”

I believe this will be the focus area of IT spending in the industry in the next several years.

Adding More “Science” to the “Art” of Investing: The William Blair Global Equity Team’s Perspective

At William Blair, we have been, and always will be, dedicated to the art of fundamental, bottom-up stock-picking—but we on William Blair’s Global Equity team have taken a proactive approach to technology integration in investment-related activity. We started a decade ago, building a custom-made research and portfolio-construction software platform to reflect our existing investment process.

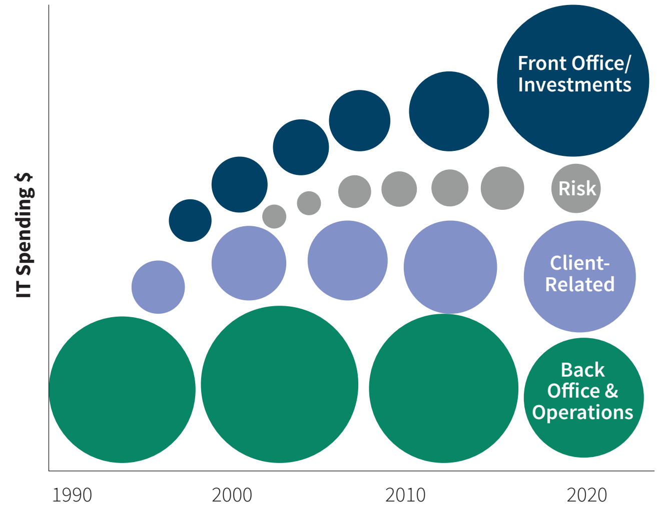
In beginning this process, our primary goal was to foster investment team collaboration and the transparency of research and portfolio activity to better align all parties with investment objectives. A secondary consideration was the collection of data—capturing events related to the investment process to better monitor and measure research activity and decision-making.

A side benefit of creating a system that captures the investment process was that it forced us to truly analyze our existing analog investment process, exposing biases of which we were unaware, and allowing us to improve. No technology solution will fix a subpar investment process but having the right systems to support the process is key; an inadequate technology solution can pose potential performance risk, or at the very least it can be lost opportunity.

Once a research and portfolio-construction software platform is in place and supported, more advanced tools can be introduced to enhance investment outcomes. More recently, we have been focused on such analytics. Our use of systematic stock factors, for example, has greatly enhanced the scalability and efficiency of our investment process. The integration of systematic analysis enhances the objectivity of our fundamental investment process. We have also extended these tools into our investment strategy and risk management applications, to apply a coherent framework throughout the process.

The next step was to create customized dashboards and alerts to push information to our investment professionals. Finding and

Figure 1:
The Evolution of IT Spending in Asset Management



Source: William Blair.

serving up the most useful information, rather than forcing users to navigate the massive information universe manually, was a critically important paradigm shift.

Moreover, it is essential that all applications are transportable, with hardware and software that must be integrated. We thus developed a location-agnostic workflow that lets us collect, analyze, and share information from almost any place across devices.

With the advent of the cloud, software-as-a-service applications, and data warehousing, systems such as these are even more accessible and relatively low in cost. These applications can be used to identify opportunities and risks that would be far more complex or time-consuming for humans to identify in a conventional manner. Standard visualization tools like Tableau are good example of what is readily available now. They do not make the decisions or judgment calls themselves, but assist in the process.

We have all heard the jargon: machine learning, artificial intelligence, natural language processing, neural networks. The goal—after you have solidified a system that reflects your investment process and enhanced that process—is to leverage the technology to evolve the investment process itself. In my opinion this is the holy grail of technology adoption in the investment arena.

I think it would be arrogant, given what we have seen in a number of other industries, to believe artificial intelligence could not improve our analysis and decision making. Yet I have seen such technology applied only in the quantitative hedge-fund space.

There may be good reason for this. Various analyses point to the fact that decisions driven exclusively by machine learning and artificial intelligence techniques are beneficial in the short term, which make them suitable for quantitative trading strategies. But such investment decisions have not proven effective across longer-term investment horizons, which fundamental strategies tend to favor. According to Sanford C. Bernstein & Co., LLC, most artificial intelligence strategies—while they have attractive risk profiles—have underperformed the market and their peers since 2012.

“The goal—after you have solidified a system that reflects your investment process and enhanced that process—is to leverage the technology to evolve the investment process itself.”

— Ken McAtamney

I believe fundamental investors can utilize new technologies to enhance our processes. Collecting, collating, and analyzing data about our investment activity provides insight into our cognitive biases, and this will allow us to better manage the perhaps unwitting risks we take and improve our decision-making.

This will require applying machine learning and artificial intelligence to big data (both structured and unstructured) to visualize the investment process and potential outcomes in a way that most investment professionals cannot see as clearly today. To accomplish this we will need to hire people with different set of skills and incorporate them into our investment teams.

How will we address the likely tension between the classically trained fundamental investment manager and the new breed of technology expert? That will be a challenge. I believe that to succeed, however, we cannot continue to treat this as a support function to be outsourced to our IT departments.

Conclusion

A shift is underway to move technology spending from the back to the front office, from the defensive to the offensive alpha-generating areas. This is poised to continue in the years to come.

It is important to note that this will not lead to less human judgment and analysis. Rather, it will lead to the opposite, because the commoditization of information collection and processing puts a premium on the actual analysis itself.

By allowing a faster and more efficient analysis of the information available and continual improvement of the decision making process, current and future technologies can improve human judgment. ■

About William Blair

William Blair is committed to building enduring relationships with our clients and providing expertise and solutions to meet their evolving needs. We work closely with private and public pension funds, insurance companies, endowments, foundations, sovereign wealth funds, high-net-worth individuals and families, as well as financial advisors. We are 100% active-employee-owned with broad-based ownership. Our investment teams are solely focused on active management and employ disciplined, analytical research processes across a wide range of strategies, including U.S. equity, non-U.S. equity, fixed income, multi-asset, and alternatives. As of March 31, 2017, William Blair manages $67.9 billion in assets. William Blair is based in Chicago with an investment management office in London and service offices in Zurich and Sydney. William Blair Investment Management, LLC and the investment management division of William Blair & Company, L.L.C. are collectively referred to as "William Blair."

Important Disclosures

This material is provided for information purposes only and is not intended as investment advice, offer or a recommendation to buy or sell any particular security or product. This material is not intended to substitute a professional advice on investment in financial products and any investment or strategy mentioned herein may not be suitable for every investor. Before entering into any transaction each investor should consider the suitability of a transaction to his own situation and, the need be, obtain independent professional advice as to risks and consequences of any investment. William Blair will accept no liability for any direct or consequential loss, damages, costs or prejudices whatsoever arising from the use of this document or its contents.

Any discussion of particular topics is not meant to be complete, accurate, comprehensive or up-to-date and may be subject to change. Data shown does not represent and is not linked to the performance or characteristics of any William Blair product or strategy. Factual information has been taken from sources we believe to be reliable, but its accuracy, completeness or interpretation cannot be guaranteed.

The issuers referenced are examples of issuers William Blair considers to be well known and that may fall into the stated sectors. William Blair may or may not own any securities of the issuers referenced and, if such securities are owned, no representation is being made that such securities will continue to be held.

Information and opinions expressed are those of the author and may not reflect the opinions of other investment teams within William Blair. Information is current as of the date appearing in this material only and subject to change without notice.

This material is distributed in the United Kingdom and the European Economic Area (EEA) by William Blair International, Ltd., authorized and regulated by the Financial Conduct Authority (FCA), and is only directed at and is only made available to persons falling within articles 19, 38, 47, and 49 of the Financial Services and Markets Act of 2000 (Financial Promotion) Order 2005 (all such persons being referred to as "relevant persons").

This document is distributed in Australia by William Blair & Company, L.L.C. ("William Blair"), which is exempt from the requirement to hold an Australian financial services license under Australia's Corporations Act 2001 (Cth) pursuant to ASIC Class Order 03/1100. William Blair is registered as an investment advisor with the U.S. Securities and Exchange Commission ("SEC") and regulated by the SEC under the U.S. Investment Advisers Act of 1940, which differs from Australian laws. This document is distributed only to wholesale clients as that term is defined under Australia's Corporations Act 2001 (Cth).

This material is not intended for distribution, publications or use in any jurisdiction where such distribution or publication would be unlawful.

This document is the property of William Blair and is not intended for distribution or dissemination, directly or indirectly, to any other persons than those to which it has been addressed exclusively for their personal use. It is being supplied to you solely for your information and may not be reproduced, modified, forwarded to any other person or published, in whole or in part, for any purpose without the prior written consent of William Blair.

5646757 (05/17)

William Blair | williamblair.com

222 West Adams Street | Chicago, IL, 60606 | +1 312 236 1600 | +1 800 621 0867