Citisoft

2018 Outlook

Setting the Stage for Transformation

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At a Glance

Our outlook last year highlighted a period of remarkable change, not only in asset management, but in financial services as a whole. From political turbulence, to shifting investor preferences, to the rise of the fintech zeitgeist, we had a lot on our plates to opine for the year. How'd we do? We predicted that data would underpin nearly all new initiatives over the last year (check), the robots wouldn't be coming yet (half points), and that cumbersome legacy platforms would finally get shown the door (wishful thinking).

After a year of turning tides and relentless buzz, we're finally seeing true innovation take hold in our industry. Our hot takes for the new year? Digitalization will fundamentally change operations, regulatory whiplash will continue, purpose-built front office technology will improve, and largescale transformation projects will dominate budgets. Read on for more of the big trends we're watching in asset management technology and operations in 2018.

Digital Transformation

Innovate or stagnate

We believe that digital transformation will give rise to all things disruption in the new year and beyond. *Digitalization* is the use of digital technologies to fundamentally change a business model. Though often used interchangeably, it is different from *digitization* which is the simple transfer of information to digital format (e.g., paper report to excel). We underscore this difference because it captures the sweeping and transformative nature of the digitalization trend. For years, we've been digitizing information in investment management, but we've only recently moved into a new era where we are re-engineering every facet of the business upon a digital foundation.

What does it mean to take on digitalization within the asset management industry? As with several other transformative initiatives underway in our space, the lines are blurring across the front, middle, and back office with what it means to "go digital." We're seeing an urgency to digitize manual back office functions with robotics and cloud-based software playing a major role. Moving to the front of the house, firms are increasingly asking themselves how they can use digital tools and technology to strengthen and broaden their relationships with clients via enhanced user experience.

Citisoft's asset management clients, as well as our close partnerships with the service provider and software vendor community, have us confident that digitalization is coming and coming fast. In the past months alone, we have been privy to some very exciting developments in the digital space spearheaded by both our clients and vendor partnerships.

Commitment to a "digital first" approach has become top-of-mind in our discussions with both asset managers and software vendors alike. The industry is growing cognizant of the need to develop and deliver a multi-channel digital experience for its various consumers, end users, and clients. Citisoft's client base encompasses asset managers, asset owners, and service providers of all shapes and sizes; as one might suspect, the larger players are already heading down this path with "digital first" as a guiding principle regardless of their inclination to build or buy their new generation architecture platform. Our more specialized and boutique clients are partnering with an increasingly innovative vendor community (both established players and new entrants alike) pushing the envelope on their own digital transformation efforts.

To digitize or die, as some suggest, may be a bit strong; a more apt prediction might be "innovate or stagnate." Either way, the industry is finally starting to resemble something from this century as it gradually sheds its legacy skin and moves into the new digital age.

New talent influx

It's hard to see how the volume of demand for digital expertise within the industry can be met by the current capacity. Most firms have been built upon a conservative culture, where change is carefully controlled and managed. Those firms that recognize this movement in the market will quickly identify the need to introduce new talent in order to make this happen. Although experienced hires will stand at the helm of most front, middle, and back office operations, we believe that making key hires from industries outside of asset management will help realize the goals of digital transformation.

In our opinion, this talent will come from two key initiatives. First, investment managers will look to other industries, both within and outside financial services, to find a skillset that understands robotics, data science, and client experience (see our take on fintech future for more). Second, firms will lure young talent away from the tech field and into investment management. We believe that large firms will need to be proactive in both areas but this is a tall order for an industry not known for innovation.

In order for talent acquisition to be successful, it will need to be in sync with a wider culture change, with a greater capacity to change and a "make happen" approach as opposed to a "take care and worry" one. New talent left in incubators or in isolated silos will quickly lose interest and leave—which brings to mind a key takeaway from 2017: legacy behavior is stifling innovation. In the coming year, we believe that onboarding staff from new pools of talent will be a core strategy in pushing innovation, and will only be successful if we see a seismic cultural shift.

Keeping up with the Front Office

New products, new operating models

Markets are booming but lessons of the past loom large on the investment landscape. Active strategies have begun to outpace passive, and after years of investment outflows, they are attracting new money.[1] Products including multi-asset, smart beta, and ESG (environmental, social, and governance) strategies continue to evolve and gain traction, appealing to the next generation of sophisticated investors. With these core strategies coming into focus, portfolio managers continue to advance their concentration on emerging markets to find new sources of alpha.

While this seems revolutionary for the industry, we view this as the re-packaging and marketing of investment capabilities that have been around for ages. We believe that managers will continue to blur the lines between asset class specific desks and the associated operating model that enables them, requiring capabilities that can correlate investment research, analytics, performance, and risk. They will then need to scale this type of operating model, requiring high touch systems, operations, and data services.

[1]CNBC, "The Tide Has Turned: Active Outpacing Passive Investing," September 2017.

Challenges of convergence and scale

The true challenge in executing these strategies for investment managers comes across two dimensions: convergence and scaling of capability. The vendor landscape predominately consists of best of breed, asset class specific systems and scalable multi-asset investing today generally requires functional trade-offs or proprietary solutions and manual support. Managers must distinguish their products and value propositions, requiring robust data analytics capabilities, including ESG research. That said, integration and automation will be limited, specifically with respect to custom benchmarks, deploying transactions based models to achieve precision of analytics, and decomposition of risk utilizing advanced or customized factor models.

We're optimistic for improved technology as we watch the vendor landscape shift quickly through M&A activity, new entrants to the market, and unprecedented investment in product development. These developments likely mean a continued state of flux in the road ahead for front office technologies, operations, and data, and a high probability that managers will seek new solutions this year and in the foreseeable future.

Regulation Rules

Keeping pace with political shakeout

In last year's outlook, we anticipated that traditional investments would continue to yield returns over the course of the year, but we could not have predicted the impressive and steady growth of the stock market in 2017. We believe that much of this growth is owed to stabilization in the global political landscape and tax policies that encourage corporates to invest overseas. Fears that populism would sweep the political landscape in Europe had many investors feeling bearish about 2017. However, these fears were allayed when the immediate impact of Brexit was minimized and populist sentiments were quashed in Spain and Germany. This boost in confidence as well as continued economic growth in Asia contributed to the MSCI World Index rising every month of the 2017—an unprecedented feat.

Such steady growth begs the question of whether we're on the brink of a downturn. While we don't hold a crystal ball when it comes the markets, we do believe that investments in 2018 will be more significantly impacted by monetary policy and regulation. In terms of the economy, we'd note that with healthy markets and the 10-year anniversary of the market crash here, it's likely that we'll see interest rates continue to rise and quantitative easing tactics rolled back.

Moving away from the front of the house, we believe the greatest area of impact in technology and operations in 2018 will be regulation. Numerous delays have pushed important deadlines and decisions back, but the impact of MiFID II and Dodd-Frank looms and hopes that political changes would prompt a sweeping rollback of oversight policies have faded. A major drawback of political turbulence has been uncertainty about how and when regulations will be enforced. Recent surveys have illustrated that many business, operations, and technology teams' most pressing regulatory burden is simply understanding incoming regulation and keeping up with "guidelines on the fly." As investment managers are doubtless cognizant, keeping up with the regulatory landscape will continue to be a challenge and priority for 2018.

MiFID II: Here at last

There was no bigger regulatory buzz over the last year than MiFID II. Now that the regulation is finally in force, we'll find out whether organizations' preparations have been sufficient. To date the larger firms, especially those with a strong European presence, have made significant investments in the legislation. However, we've found that many firms have not appreciated the full impact of this wide-ranging regulation, particularly smaller firms or international operations that have a limited or no physical presence in the EU region.

Those making active efforts to implement MiFID II will be better positioned to work constructively with authorities, even if they've missed their first deadlines. Firms that are complacent or ignorant of the requirements, however, will struggle to get a sympathetic hearing. Managers that are not yet compliant—and we believe there are many—should not panic. If you fall into this boat, you should show an understanding of MiFID II and be active in identifying and implementing solutions. With that in mind, hitting 2018 does not mean the road to compliance is over. There will be several deadlines to meet this year and at this early stage, the UK's Financial Conduct Authority promises it "will not take a strict liability approach, especially given the size, complexity and magnitude of the changes that are required."

Cybersecurity under scrutiny

Many government officials are probably ready for a reprieve from cybersecurity talk, but it doesn't appear that 2018 will give anyone—including the buy side—that opportunity. Global regulators spent 2017 demanding additional transparency from investment managers via SEC Modernization, the SEC Liquidity

Rule, and MiFID II. All three rules are aligned under a single theme: providing more accurate and detailed data, more frequently, in the interest of investor protection. We believe that in the coming year, both regulators and investment managers will focus on securing our industry's data from very real, formidable threats.

Over the last year, regulatory reporting and cybersecurity have become inextricably linked. Based on recent events and disclosures, we know that the SEC has concerns with its own cybersecurity, specifically around the EDGAR system. EDGAR is prone to hacks and glitches that have managers wary of transmitting some of the world's most sensitive data. The SEC has delayed the implementation of the Modernization and Liquidity Rule regulation for the specific purpose of bulking up EDGAR cyber protection and the buy side will be equally busy with its own cybersecurity initiatives. Our commoditized industry is unforgiving of careless security practices, so we expect cybersecurity to remain a hot topic in 2018.

A Fintech Future Comes to Fruition

RPA competes with offshoring

In the recent past, asset managers and service providers have looked to offshore as many standard processes as possible, largely using wage arbitrage to reduce cost. In many cases where firms have moved these processes to offshore locations, they have looked to maintain service levels by increasing resources. Now that the cost savings have been realized, it is challenging to see how these processes can continue to be driven down. It is becoming increasingly clear that the only way to reduce cost and improve efficiency is not to add more human resources, but to utilize technology. The most commonly offshored processes are those that are repeatable and consistent. The obvious "low hanging fruit" for transformation through automation is within these same areas.

In 2018, smart firms will move standard processes to an automation basis and away from an offshore or outsourced model. Robotic process automation (RPA) will become increasingly common to improve services while controlling and driving down cost. In the short term, this will require investment, but it will quickly lead to clear competitive advantage for those firms that embrace a technology-driven operating model and will be a growing theme for the coming year. If you're not assessing where RPA could fit into your operational model in 2018, you (and your service provider) should be thinking about it.

Blockchain gets grounded in reality

Last year, we discussed the "blockchain backlash." With much ado about the transformative potential of distributed ledger technology, the buzz overshadowed any progress being made in R&D. Though blockchain is still top-of-mind for many fintech pundits, it fell lower on the list of priorities for asset managers over the last year. With a fundamental education in the technology established, small to mid-size asset managers saw the technology's complexity and unsurprisingly settled back on a wait-and-see approach.

That said, while things quieted down among most of our clients on the blockchain front, those investing in R&D made huge strides. Over the last year, early innovators started using blockchain for private equity markets, bond trading, proxy voting, and improvement of the netting process for repo transactions. In one notably successful pilot, blockchain was used to buy and sell mutual funds for 1,200 fund managers and distribution clients. In the fourth quarter, the Australian Stock Exchange made big news by confirming plans to replace its entire post-trade system, including the clearing and settlement of all equity transactions, with blockchain technology.

Despite progress being made by banks, vendors, and service providers, many are still reserved in their assessment of blockchain. In April, J.P. Morgan pulled out of the R3 consortium, hinting that the investment in development may still be far off from achieving any kind of ROI. Our take? Development is happening in our space, and for every blockchain press release we see, there are more POCs under wraps. We've heard recent news from leading solutions providers about big things coming in 2018, so don't be surprised to see some impressive use cases hit over the next year, laying the foundation for things to come.

But don't take our word for it. Todd McDonald, co-founder of R3, stated that next year will be "the year for production; the year of implementation…it's what the banks who have invested in us are 100 percent focused on. It's making things real, that's what 2018 is about."

Artificial intelligence on the horizon

There is perhaps no more intriguing innovation on fintech horizon than that of artificial intelligence. AI is far more sophisticated than RPA in that it can perform calculations and actions that replicate human behavior, taking unstructured and structured data in tandem and applying complex, pre-programmed logic. As AI has matured, technologists have explored how to program applications to make higher-level decisions and store information to inform and refine future outputs. This form of artificial intelligence—known as machine learning—programs a system to program itself.

While we're bullish on the potential for RPA to take hold of investment management in 2018, we're a bit more reserved in our assessment of how AI is changing the investment landscape. Keeping that in mind, early adopters have been experimenting with small-scale applications for years. Perhaps the most compelling cases of progress are coming from the hedge fund industry. The Man Group is a noted leader in the development of machine learning. After success using machine-learning models at its AHL Dimension fund, it has now expanded to three more money pools, collectively managing $12.7 B. We can't be sure how widespread adoption is as many hedge funds keep investment strategy close to the chest, but we anticipate that most new hedge funds will make use of artificial intelligence and machine learning models in the coming years with progressive asset managers following suit.

Dipping into Data Lakes

Over the last decade, investment managers have made significant inroads in understanding the importance of data governance and building tools and processes to manage structured data. As data infrastructures continue to mature, forward-looking firms are beginning to explore how to manage unstructured data (e.g., images, text, documents, and social and online media) to inform investment decisions. For managers that have a well-governed data warehouse strategy, managing this information is within reach through data lakes.

While the topic of data lakes has been appearing more frequently in industry news, thought pieces, and on conference agendas, it can be difficult to get a clear picture of how they will work within an existing data infrastructure. One common misconception is that they will replace data warehouses. Before throwing in the towel on a warehouse implementation, it's important to note that a data lake is meant to complement a data warehouse strategy. A data lake serves as a central repository for all structured and unstructured data. Because a data warehouse uses defined schemas, it is a downstream system that has stripped out rich information. By moving enterprise-wide data to a lake before any schemas are applied to that data, a firm can tap into all of the organization's data to slice, dice, report, and analyze as end users see fit.

It may be a bold claim, but we have reason to believe that unstructured data is where the future lies in asset management. To capture alpha, managers need to think creatively to find insights that others don't. To utilize futuristic AI tools, firms need a complete picture of their data. And to stay afloat amid fee pressure, operations teams need to be more efficient in their data processes. Data lakes hold this promise.

So where are we now? In most cases, asset managers are still stymied by redundant data marts, extremely inefficient ETL processes, and yes, spreadsheets. For 2018, we believe that establishing a strong data foundation will continue to be a focus. However, the next generation of data enablement is right around the corner and we're seeing data lake exploration underway at asset managers with varying levels of data maturity. Perhaps the promise is just too hard to ignore; even amid data chaos, we're seeing firms dip a toe in the data lake waters.

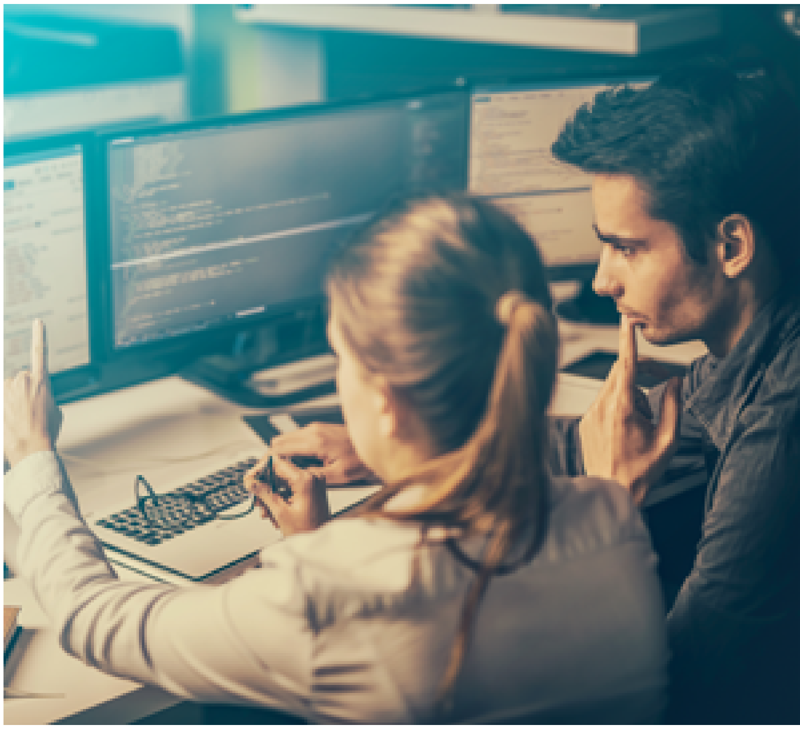
Shifting Vendor Landscape

Lines blur between software and services

In last year's retrospective, we noted that software vendors and service providers were aligning themselves with cloud providers to reap the benefits of rapid deployment, standardization, scalability, and lower total cost of ownership. This trend saw service and solutions providers making big bets with their cloud strategies, and pushing their existing clients to adopt a hosted deployment. More recently, we've seen providers voyage farther down this path to meet the demands of clients for both hosted and outsourced solutions.

For asset managers invested in top-of-the-line platforms, technology can easily outpace operational capabilities. Utilizing an outsourced solution can help rightsize to a firm's infrastructure, but making advanced technology available to the majority of asset managers means that their in-house resources may not be able to keep up with this new functionality. The comparison that readily comes to mind is putting a souped-up engine in an old car. In many cases, asset managers are severely under-utilizing the technology available to them and just now realizing it.

As new products and multi-asset strategies see increasing support on leading technology platforms, we're seeing clients look to their solutions providers to help harness the technology available to them. Vendors are meeting this demand by augmenting their services to offer customized technology, hosting, and managed services arrangements. In this model, asset managers are better able to leverage the full capability of these platforms, while taking advantage of often lower-cost geographies and economies of scale employed by their solutions provider—whether that's a traditional software vendor or full-blown outsourcing provider. We expect the trend of shifting from installed,



in-house operations to hosted and outsourced operations to continue, especially as outsourcers build RPA competencies to further save costs.

Outsourcing contracts come to a close

Not all managers are undergoing the gradual shift from installed to hosted to outsourced. Following the 2008 crash, a significant number of asset managers entered into their first middle office outsourcing contracts. With the typical term of these contracts between 7 and 10 years, many first-generation outsourcing contracts are up for renewal.

We've observed a rash of asset managers use this shift as an opportunity to re-assess their contracts and explore the options available to them. In many cases, firms are issuing RFIs to ensure that their current provider is competitive in the market. While some areas of outsourcing tend to be more commoditized, we're seeing service providers offer differentiation through middle office services and increased levels of customization. In addition, providers are offering unique "value add" services that typically fall outside the realm of what most would consider middle office functions, such as data-as-a-service or risk and analytics.

While numerous firms are performing due diligence on the market, a shift to a new provider is not necessarily de rigueur. In many cases, managers are using the renegotiation period to address current pain points and make changes to their contract. An outsourcing transition is often a monumental effort that can be spared entirely by a contract change or restructuring.

The number of assessments that we've seen indicates that asset managers are putting pressure on service providers to meet their peers in terms of cost and innovation. We view this as a positive trend for the industry and will no doubt be a boon to organizations now looking at renegotiation of contracts ending between 2018 and 2020.

Managing Transformation

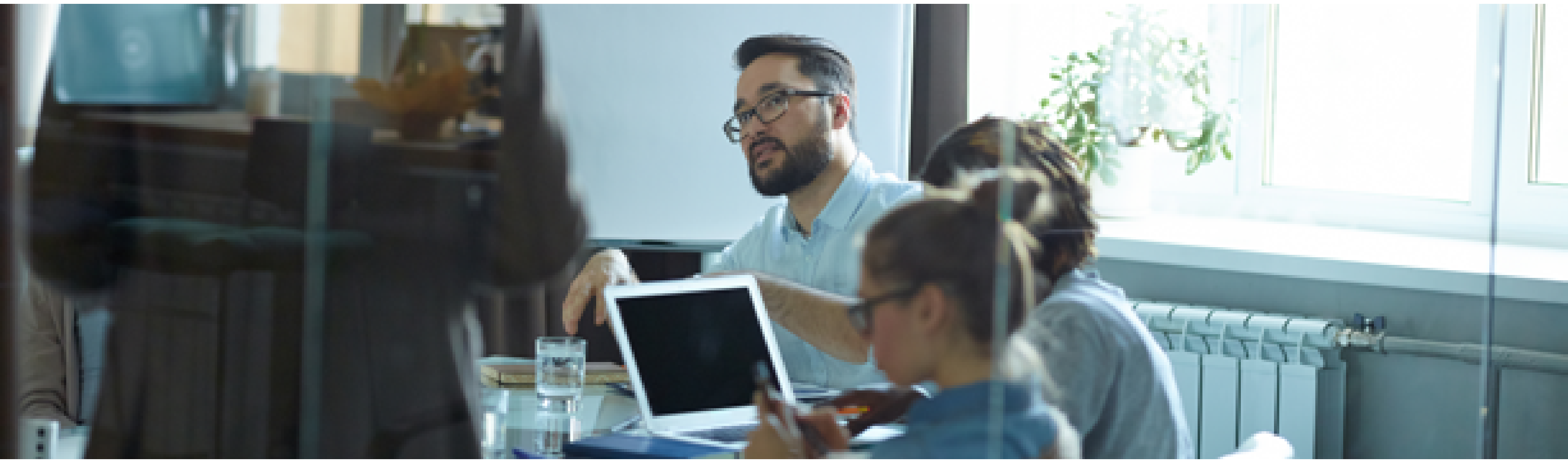
Getting value from external consultants

As we wade into 2018 and beyond, Citisoft's opportunity pipeline is bursting with transformative project opportunities of all shapes and sizes. Despite the well-publicized (and in some cases, sensationalized) fee pressures prevalent in the industry, firms are still evolving their respective operations and technology footprints across a host of functional areas; in other words, asset managers are still spending money, and let's face it, that's where Citisoft enters the equation.

With the volume of programs coming into play this year, external consultants will play a significant role in advising, enabling, and executing initiatives across the asset management industry. There is a myriad of options from which to choose but for the purposes of this missive, we'll focus a bit on those firms that cater specifically to our space. It should not be surprising that projects, both large and small, succeed or fail because of the people involved. General Colin Powell put it well: "only by attracting the best people will you accomplish great deeds." If this is true, then why do so many firms continue to cut corners and base their decisions on consulting expertise purely on cost? The old adage "penny-wise, pound-foolish" comes to mind here. Stitching together project teams with contractors and mercenaries based on low rate structures typically lends itself to the expected outcomes—overrun projects absent of leadership with a me-first environment that doesn't deliver on its initial promise. Asset management firms should think twice before going down this route. In our subjective opinion, the right path is to partner with a firm that will implement a top-down and accountable leadership structure with senior partners that show up and participate.

We suggest that managers be wary of the "bait and switch" and ask hard questions of potential consulting partners. Is the team presenting the approach the same team that will be on the ground? Are the rates too good to be true? Is the project duration in line with the rest of the competitors? While you may pay an up-front premium to get the right team on the ground, consider that you are aligning yourself with a firm that will immerse itself in your environment and ultimately deliver on the vision expounded by your key stakeholders and project sponsorship.

While considering programs for the coming year, asset management firms need to think about their resourcing approach when embarking on a large-scale transformation initiative; partnering with a consultancy that is accountable and invested from the top of the house to the consultants on the ground is an investment that will pay dividends in the years to come.



Conclusion

The last two years have been a period of remarkable change across the geopolitical landscape. In our industry, this turbulence was underpinned by the recognition that asset managers and solutions providers would need to innovate to keep pace with competitors and new entrants. From our vantage point, the buzz that surrounded this rush generally overshadowed innovation of true substance.

As the din quiets, we're seeing substantive change take place in the form of digitalization, cost reduction, improved technology, and data enablement. We're stepping into a new era, and it's clear that the asset management industry is beginning to sow the seeds of change rather than simply opine on it. As the chasm between fintech and financial technology continues to close, we believe 2018 will be the year of major discovery and definition that will establish the footprint for development in 2019 and beyond.

About Citisoft

Since 1986, we've solved complex technology and operations challenges for the investment management industry. With a team of over 100 dedicated consultants in North America and EMEA, we're committed to working with asset managers and asset servicers globally on projects of every scope. From guiding complete business transformation programs to on-the-ground delivery, our team is equipped to fulfill any strategic or tactical need.

To learn more about our Advisory and Delivery Services or to leverage the legacy scale in your organization, contact us at insights@citisoft.com or visit us online at www.citisoft.com.

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