How tech can help institutionalise operations

Virtual desktops give hedge funds secure mobility

Alternative data sets prepare to go mainstream
In this issue...

03 Technology innovation thriving but ‘software intelligence’ necessary
By James Williams

06 Using the cloud for flexible deployment of technology
Interview with Roger Woolman, SS&C Advent

09 How technology can enhance fundraising
Interview with Bill Neuman, Eze Software

11 Are alternative data sets becoming mainstream?
Interview with Patrick Henry & Doug Dannemiller, Deloitte & Touche

13 Virtual desktops give hedge funds secure mobility
Interview with Paul Ponzeka, Abacus Group

17 Smart automation
By Mike Canni, Opus Fund Services

20 Creating cloud benefits
Interview with Jason Connelly, Axioma
Technology innovation continues to develop at an astonishing pace. And for those hedge fund managers in active fund raising mode, the ability to demonstrate superior reporting, data management, and performance attribution skills with the latest technologies is becoming a serious point of differentiation. Managers are not blind to the digitisation megatrend. They well might have a digital transformation strategy in place but often there exist limiting factors that prevent them from moving forward. While it could be the lack of understanding the technological options available, it could also simply be due to the lack of available budget or lack of senior management buy-in.

“It’s a cultural shift as opposed to just swapping out technology,” says Ross Ellis, Vice President and Managing Director of the Knowledge Partnership in the Investment Manager Services division at SEI. “It’s understanding how you’ve done things in the past and having a strategic commitment to
changing from manual-based workflows to digital. The asset management industry has always been a relationship-based, people oriented industry. Yet with technology, it’s moving things in the opposite direction. It’s about process, transparency, and trusting the system; the irony is, it now frees up resources for managers to perform more higher value relationship-based work for clients.”

Integration means customisation
To achieve this freeing up of resources, managers need to partner with technologists who have deep level integration built in to their platform offering; whether that’s a portfolio analytics provider, a risk analytics provider, a cybersecurity vendor, EMS vendor; whatever the capability may be. The fact is, when you connect things together it only works if the plumbing is in place. Axioma Risk, for example, enables hedge funds to look at risk from a front-office perspective when doing portfolio construction, and from a middle-office perspective to do risk reporting for investors and regulators, giving CIOs or CTOs an enterprise view of multi-asset class risk across their organisation. Most vendors offer what they think the view of risk should be, and sell that particular methodology to the marketplace. Axioma, on the other hand, provides the platform for people to look at their strategies in very specific ways.

“There are other firms that offer front-office tools, or middle-office tools, but they aren’t necessarily connected at the back-end,” says Jason Connelly, Managing Director, Business Strategy & Execution, Axioma. “Files end up getting sent back and forth and you lose a lot in that process. That’s where we are able to help clients enhance their portfolio construction. Our solutions are best-of-breeds, and we are making them even easier to use.”

Without an agile system infrastructure, asset managers face continued operational pressures when trading new assets and instruments. And with so much regulatory compliance to contend with, the more firms are able to achieve a complete overview of instrument positions, risk levels, collateral and margining levels, etc, the more adept they can become at satisfying both regulator and investor expectations.

“I do think enablement is the key to this,” says Roger Woolman, Business Development Director, Asset Management & Alternatives at SS&C Advent. “The ability to react quickly when things change and knowing that you have a system that can accommodate new strategies, can be quite empowering from an investment perspective. If different market opportunities are being presented, you want to be able to act on them, to be agile.

“This quicker time to market can make an asset manager more competitive and become proactive rather than reactive.”

Multi-asset class risk is not itself a differentiator. As Connelly says, “it’s the integration piece that differentiates us from our peers. “How we bring front and middle office together, risk and return, how we seamlessly plug into our clients’ ecosystems using APIs and so on. We make sure clients are partners, this is not a client/vendor relationship. It’s far more collaborative.”

Axioma Risk helps risk managers gain a complete picture of their risk-return profile and translate it into actionable insight. It is, in many ways, a natural evolution of where the firm started, using flexible front-office models, then middle-office models, and connecting the two. “We don’t want to be viewed only as a risk and return analytics vendor, we do more than that and provide a platform for clients to integrate the entire workflow.

“We are building out our fixed income analytics toolset to complement our equities portfolio management tools. There are a number of things we are doing within fixed income right now,” adds Connelly.

Smart automation
Mike Canni is the COO at Opus Fund Services. One of the most important technology developments, currently, in his view, is Smart Automation, which involves combining a deep understanding of workflows with robust granular data to allow highly
Geneva®

Helping you thrive in an increasingly complex world

Learn more about our Alternative Fund Management solution at investmentmanagement.tech
or email advent@sscinc.com for a demo
Using the cloud for flexible deployment of technology

Interview with Roger Woolman

The flexible deployment of technology using cloud-delivered solutions and hosted services is, in many ways, levelling the playing field with asset management. Historically, using the best systems in large, sophisticated IT architectures to support complex trading strategies was the preserve of the biggest managers.

But in many ways, the rapid evolution of cloud technology has revolutionised what is now possible, with smaller managers equally able to avail of industrial-strength technology without having to worry about how to pay for it all. Advances in cloud delivery access and security are giving asset managers, regardless of size, the opportunity to leverage the latest mission-critical technology tools and analytics from third-party specialists.

This shift from in-house system deployment to outsourced cloud-based solutions has been a key feature of the asset management industry.

“Larger managers have a lot of systems and a lot of legacy issues and they may want to do something new but without having to consider the knock-on effects to existing systems and architecture” says Roger Woolman, Business Development Director, Asset Management & Alternatives at SS&C Advent. “If you have a cloud-based system that sits in place like an overlay, and which allows you to introduce a new system on top of the existing IT architecture, then it doesn’t necessarily have to be on premise. It could be a private cloud solution or an outsourced managed service which is also hosted.”

Woolman says that a phased approach is advisable when moving to the cloud. This requires a cultural shift within the organisation to fully exploit the benefits. This phased or ‘hybrid cloud’ approach involves starting with those IT systems that best make sense to be in the cloud and which are relatively easy to integrate. Then, over time, more systems can be migrated to the cloud as part of a long-term strategy.

Some asset managers opt for a wholly on-premise deployment of in-house developed or third party technology solutions; or some combination of both. This model has long been favoured by the largest investment firms thanks to the control and customisation benefits it affords.

However, the cost to implement and maintain this type of infrastructure, and employ the IT staff to support it, has been beyond the budgets of many small and mid-size asset managers. This is why, in Woolman’s view, the ongoing development of cloud delivered technology solutions and hosted services is a game-changer.

“That said, you’ve got to be able to deliver timely information, because that’s often when managers would seek to develop something in-house in the first place. They still want access to their underlying systems, they are just doing so in a different way, via the private cloud environment,” he says.

One can think of cloud deployment evolution in a similar way to software solutions. Years ago, just as it increasingly made less sense for managers to build their own software, and led to increased use of third party software providers, similar conversations now take place in terms of software deployment. And, to some extent, the outsourcing of automated daily tasks such as reconciliations and middle-office tasks.
“Why would you build software when you’re not in the business of building software? We’ve extended that logic to cloud services. If you want to solve something quickly, the private cloud allows people to act more quickly without having to jump through a lot of IT hoops.

“Today, firms have much greater choice and flexibility in how they structure their technology and operational environments,” comments Woolman.

There are numerous advantages to using cloud-deployed technology. They include: business responsiveness; reduced total cost of ownership; greater flexibility to increase capacity as the business grows; expanded accessibility, and more time for employees to focus on core, value-added activities.

With cloud technologies, firms no longer face a significant upfront and ongoing in-house infrastructure and system maintenance burden. Instead, they get on-tap scalability, reliability and operational flexibility, with faster system deployment, simplified maintenance and upgrade processes, guaranteed business continuity and disaster recovery, and a lower total cost of ownership.

The business continuity point is actually key. Institutional investors are looking closely at BC plans before allocating to managers, seeking assurances that if a major event (terrorism or natural catastrophe) prevented them from getting to the office, it would still be business as usual. Those who continue to rely solely on on-premise system architectures cannot necessarily provide that assurance.

Also, when a firm uses cloud-deployed software they can concentrate on things like the security aspects.

“If there’s less for them to do in terms of managing that environment they can concentrate on core tasks, in terms of servicing investors and making sound investment decisions, rather than having to think as much about operational considerations. It adds value if you’ve got a secure offering in a private cloud,” says Woolman.

He says that system agility is key to harnessing the full potential of the cloud, as is system consolidation. The rationalisation and simplification of multiple connected IT systems is a step towards that agility, as is the method of deployment/hosting.

“The goal here is business responsiveness, supported by that system approach,” adds Woolman.

Oftentimes, firms take a policy-based approach as they move software off premise and into the cloud. In some cases, managers end up changing vendors because their current software doesn’t have the requisite functionality to be hosted in the cloud.

“We take these things for granted and assume it is a simple process of moving software from one place to another. But it’s not as straightforward as that. It depends what the architecture looks like and what the on-premise deployment looks like. Some solutions aren’t naturally suited to the cloud.

“In terms of outsourcing, we also handle regulatory reporting through a dedicated portal that clients can use as a one-stop-shop for all of their regulatory reporting needs. It’s hosted and can be accessed from anywhere. There are various deployment methods and flexibility when outsourcing and regulation is an excellent example; it’s always evolving and there’s always new regulation for compliance teams to keep up to date with.

“Another piece we see outsourced a lot is the middle-office reconciliation piece,” says Woolman.

Regardless of what software solutions are used to support middle- and back-office services, the key to everything is flexible deployment. Each manager’s operational and investment needs will vary. Some will want to maintain all their technology and operational capabilities on-premise, while others seek some degree of cloud-delivered technology and/or co-sourced or outsourced operational services.

This à la carte approach suits firms who are in the process of moving across to cloud deployment.

When asked what future innovation he would like to see, Woolman concludes:

“The cloud needs to be fully exploited to lead to a self-servicing culture. This will require both innovation of applications and systems but also innovation in business. Ultimately the cloud is playing a supporting role that should lead to new ways of doing business.”
To reach your potential, you need the right technology

Today’s markets demand top-performing investment technology. 1,300 hedge funds worldwide trust Eze Software to institutionalize their investment process — more than any other OMS provider.
How technology can enhance fundraising

Interview with Bill Neuman

Technology is becoming an important factor when hedge fund managers present their investment strategy to prospective investors. The more agile and sophisticated the technology infrastructure, the more appealing the manager will likely appear. And whereas in times past it would have been too much of a capital expenditure to spend big on IT and keep pace with larger hedge fund shops, technology firms like Eze Software are helping to level the playing field.

“The key for us is to make sure we apply technology to the real problems our clients have or anticipate they will have,” says Bill Neuman, senior managing director of Product and Engineering and responsible for global R&D at Eze Software. “One trend we’ve observed is that hedge fund managers want to focus on their core competence. They want to have a more all-encompassing solution that requires less IT administration; something that gives them a tailored ability to manage the business the way they want without the burden of running on-premise deployed technology.”

Part of the mission at Eze Software is to ensure the continued democratisation of asset management, helping small managers compete by supplementing headcount (i.e. compliance staff) with effective technology.

“Some 70 to 75 percent of our clients are either hosted or pure cloud,” confirms Neuman. “If fund managers are operating in an environment where they are having to deal with IT issues, it means they’re not focusing on generating differentiated returns for their investors, or achieving operational alpha.”

Indeed, investors are becoming much more demanding at the pre-allocation stage and are looking for things that smaller managers, in particular, would have a hard time providing. These might include transparent processes to mitigate operational risk, guarding against trading errors, the ability to provide differentiated product offerings and so on.

Technology, in this instance, can make a meaningful difference to those managers still in fundraising mode, especially if they use a vendor that can manage the entire investment management lifecycle.

“Investors want fund managers to mitigate as much unneeded risk as possible and also to offer a differentiated product. However, differentiation comes in many different forms. HNW investors are looking for product customisation and discrete control over those investments, as evidenced by the growing number of separately managed accounts. They might want to tweak the strategy, establish unique fee structures, etc.,” says Neuman.

Handling such complexity is a big challenge for small and mid-sized hedge fund managers, not to mention other considerations such as tailored reporting as and when an investor requires it. There aren’t many vendors in the marketplace that can handle the allocation complexity of multiple SMAs, multiple portfolios and investment strategies using multiple brokers.

Then there’s the issue of handling an investor restriction layer. How many products in the market have a good enough compliance engine to handle standard regulatory rules as well as customer-specific variations?

“Custom fee structures are yet another strand of complexity. Again, there aren’t many products that can calculate custom fee structures or allow you to tailor them to the degree needed by many asset managers today. These creative fee structures need to be managed by a system, especially if you don’t have a whole back-office team to do it for you. Whether it’s product customisation, compliance, reporting, fee structuring – all of which will likely be considered in an investor ODD – there are very few technology firms who can check the box. It’s increasingly difficult for any asset manager to thrive without a healthy dose of enabling technology; our goal is to make that tech as accessible as possible,” concludes Neuman.
efficient and accurate decisions to be made. “New millennial managers have grown up in a technology driven world which offers many core services for no charge. To achieve this, industries put a premium on the elimination of errors, more efficient and higher quality production, and a better user experience. Continued innovation in this area will only be possible through the application of smart automation.

“We have identified numerous benefits that makes smart automation an important focus for our business. It helps improve quality, accuracy, timeliness, reduces costs, and mitigates risks in the current cyber-centric business climate,” explains Canni.

Opus is applying smart automation to the investor onboarding process; something that traditionally has been both time consuming and risky work. An error may result in statements being sent to the wrong email address, or redemptions/distributions being paid out to the wrong account. “By creating highly automated workflows,” says Canni, “we attempt to mitigate these risks, so that no single point of failure exists. As an example, investor access to our portal is 100 per cent automated. There is no manual user setup, nor permissions. Instead a series of progressive algorithms automatically enable an investor’s account once the appropriate levels of review have taken place.”

A few of the main technology features associated with smart automation include:

- Independent server-side logic checking and validating application side logic, using proprietary algorithms.
- Workflow optimisation, ensuring that the right people are doing the right things, at the right time.
- No single points of failure, substantially reducing errors associated with work being completed manually.

From an R&D perspective, Canni confirms that Opus will shortly be releasing 100 per cent of the NAV delivery process to its clients, enabling fund managers to see exactly at what stage their NAV preparation is at. “We’re also working on a proprietary machine-learning based application to produce 95 per cent of the NAV automatically. This would drastically reduce the time and manpower required to produce NAVs for our clients,” adds Canni.

**Virtual Desktop Infrastructure**

Technology advances are also reinforcing the capabilities for hedge funds to work remotely, as today’s workforce becomes increasingly more mobile. Abacus Group, a leading technology service provider to the alternatives industry, has long been at the forefront of this transformation. Ten years ago, it was offering a private-based model to reduce the reliance on data or applications having to be accessed from one location. With its new Virtual Desktop Infrastructure, it is able to provide a truly cutting edge solution for today’s mobile hedge fund manager, where they can access their desktops from any place, at any time, and securely.

This is proving beneficial from an employee onboarding perspective. Flexible technology, such as that offered with VDI, moves in rhythm with the changing business needs and expansion/contraction cycles of fund managers.

“The old fashioned model would have been that if a manager wanted to integrate, say 20 people, into a single network with a unified experience, they would have to spend USD500 per person per month to get a router firewall, buy everyone a PC, have someone configure it, manage it in the network and so on,” comments Paul Ponzeka, Managing Director, Engineering at Abacus.

“The best case scenario is it would take two weeks to get everything set up, irrespective of the end experience. With VDI, each person is a single line item. We can set people up in minutes as opposed to weeks, and they get the same user experience. This leads to a significant cost saving from a CAPEX perspective because fund managers no longer have to spend money on routers, PCs and other hardware, or worry about the time to market for each individual.

“VDI therefore dramatically streamlines the onboarding process, as well as the offboarding process – you simply terminate an employee’s access to Abacus VDI when they leave the firm, meaning there’s no concern over data leakage.”

The shockwave effect of what the public cloud can do has, over the last couple of years, led to a massive spike in innovation and new ways of thinking and opened new
Are alternative data sets becoming mainstream?

Interview with Patrick Henry & Doug Dannemiller

Alternative data will likely transform active investment management over the next five years, according to a white paper* by Deloitte. Those firms that do not update their investment processes within that timeframe could, they argue, face strategic risks. Alternative data is a wide term that spans multiple categories. In brief, it refers to any non-traditional data (i.e. market price data, trade volume data) and includes online search data, trade data, satellite and weather data, consumer transaction data, geo-location data, etc.

“The amount of data is growing exponentially. IDC said that there were 16.3 zettabytes of information generated in 2017 alone (one zettabyte is 1 billion terrabytes). In order to process all that information and generate meaningful signals out of these vast pools of data, you need machine learning and cognitive computing solutions,” says Patrick Henry, Vice Chairman and US Investment Management Leader, Deloitte & Touche LLP.

In terms of alternative data adoption, the innovators and early adopters were mostly quantitative hedge funds seeking an information advantage. The MarketPsy Long-Short Fund, for example, first began feeding social media sentiment data into its investment models as far back as 2008.

According to Doug Dannemiller, Research Leader, Investment Management at Deloitte Center for Financial Services, the use of alternative data is becoming more mainstream and investment firms are increasing their technology and analytic capabilities: “Initially, alternative data and the analytics behind it were driven to tell you what was going to happen to a stock price at the next earnings call. Those picking up on the short-term bias of these signals were hedge funds, making short-term plays to try and gain an edge.

“Now, alternative data sets are capable of generating indicators of long-term business success and match with the investment processes of many more firms, including traditional long-only managers. They are able to support forecasts on a 2-year or 4-year time horizon, not just next quarter’s earnings call.”

For many years, company CEOs have hosted investment calls to discuss the latest earnings announcement. Sell-side analysts listened closely to look for additional data points to put into their models and determine what way the stock price would likely go. This was a traditional use of data to inform the investment decision.

But as Dannemiller explains: “If we think about alternative data, it’s the same investment call. However, now you have a machine listening in, using natural language processing, picking out key words to separate any false positive sentiment from the CEO from true conviction. The machine can correlate those key words across the industry, for multiple earnings calls, as well as against historical earnings calls from the same company. It puts things in a quantitative context rather than using the qualitative judgment of the equity analyst.”

One of the keys to success in this field is getting the right talent in place. It requires data scientists and engineers working alongside analysts and portfolio managers. To get the most value out of alternative data sets, Dannemiller says, “you need to have back and forth collaboration and iterative processes to know how to crunch the data to achieve a meaningful result”.

A portfolio manager might ask for the data to be twisted in such a way as to gain the necessary insight on a company. The data scientist then does back testing on the data set to see what it would have to done to the portfolio, historically, and forecast how it could impact the portfolio going forward.

“Then the investment firm can make changes in the investment decision model but it requires different skill-sets and people who work well together to achieve this,” concludes Dannemiller.

AbacusAnywhere™
COMPREHENSIVE HOSTED IT FOR ALTERNATIVE INVESTMENT FIRMS
FEATURING VIRTUAL DESKTOP TECHNOLOGY

Flexible, Scalable, and Secure
with agility to work from anywhere.

US +1 (866) 888-1943  -  UK +44 (0)207-936-1780
sales@abacusgroupllc.com  -  www.abacusgroupllc.com
Virtual desktops give hedge funds secure mobility

Interview with Paul Ponzeka

One of the clearest manifestations of how fund managers have changed the way they work in recent times lies in mobility. A portfolio manager today is equally effective working from a sun lounger on vacation, or from the home office during inclement weather, as he is working in the office. But it’s only thanks to technology innovation, driven in part by the tremendous advances made in cloud architecture, that this has been made possible.

Moreover, as managers grow they open offices in new geographies, which can place pressure on data management and file sharing; this takes up precious time and resources.

New York-headquartered Abacus Group, which celebrated its 10th year anniversary this January, is a leading technology service provider catering to the alternative investment space. Its clients include hedge funds, private equity funds, as well as private banks, to whom it provides platform computing as a service. Abacus’s engineering team has created an exciting new system, referred to as a Virtual Desktop Infrastructure (VDI). A VDI effectively moves the desktop from the office to a virtual machine, running in a data centre.

“More specifically, Abacus VDI is a managed service desktop that is security hardened. Users are able to connect to the virtual machine from anywhere, be it their office or home, utilising the desktop they use every day. VDI has security controls, performance integration, application management; everything a fund manager needs for their security and compliance, providing them with a unified, seamless work experience,” explains Paul Ponzeka, Managing Director of Engineering at Abacus Group.

Each user logs into a terminal when they come into the office, or work from home, which then connects to the virtual machine running in one of six different data centres, which Abacus manages end-to-end.

Both from a security and operational stance, Abacus VDI has some unique features. The desktops themselves are self-healing so that interruptions to the end user are less impactful, support hours go down and the fund’s operating costs go down. The manager no longer needs to manage a fleet of PCs as everything is wrapped up in a monthly cost model.

Four of the six data centres referred to above are located across the US with two in the UK. One of the key benefits to clients using VDI is that it provides a robust disaster recovery and business continuity solution; something that investors are paying increased attention to in their ODD process.

“If one of our data centres were to go down, we have done testing and validation to the extent that we are confident we could switch over to one of our other data centres within our infrastructure; either in the US or the UK. In the event of a power grid failure in New Jersey we can move all of our VDI services to our Texas data centre. We are removing a client’s reliance on their office and providing continuity of business services on the cloud.

“Another key consideration when designing the Abacus VDI, as well as mobility and disaster recovery benefits, was cybersecurity in terms of being able to meet a lot of the industry-specific requirements and controls.

“We’ve built next generation firewalls, artificial intelligence tools to detect threat attacks, multi-factor authentication to give
clients the protection they need, regardless of where they are accessing their work files. VDI also complies with GDPR and Privacy Shield certification,” affirms Ponzeka.

He says that delivering a unified experience was an important consideration, as was the scalability of VDI for both Abacus’s own internal processes as well as its clients’ processes.

“The landscape is definitely changing in that people are getting more comfortable with running directly in the public cloud but the majority of our clients are looking for localised, high performance that our private cloud provides, in addition to security and scalability.

“I imagine this is a service that will eventually be offered through the public cloud but certainly from a performance standpoint we think it’s more advantageous running everything through our private cloud,” adds Ponzeka.

That said, Abacus does use a mix of private cloud and public cloud technology. For instance, it integrates with Office 365, as well as leverages certain services from Azure and AWS “but the virtual machines are running directly in our private cloud”, clarifies Ponzeka.

To illustrate the tangible benefits of VDI, he refers to one client that had no central office and a workforce of 25 or more people working from different locations. They had developed a number of software programs but were struggling to get them to work in a way that supported the team.

Moving to VDI has allowed the client to provide the same experience across their whole workforce, regardless of where they are coming from or what device they are using. “They get the same performance. Our VDI solution allowed the client to integrate the whole team into a corporate-based system without having to spend a large amount of money on infrastructure or network connectivity.

“Moreover, moving to VDI has allowed them to put the controls and compliance processes in place that they need around their products and their data because everything is locked in our secure VDI. This has helped the client overcome the challenge of using a mobile workforce,” outlines Ponzeka.

In terms of new developments, one key area of R&D centres on hybrid integration with the public cloud. Ponzeka explains that while Abacus currently has the ability for clients to run their servers and workflows within its private cloud, “we want to be able to extend our security footprint and reach and network connectivity to the public cloud. We want to offer the same performance, the same security and the same scalability wrapped around our platform, leveraging the public cloud to run workflows.”

As fund managers look to develop products that are native to the public cloud, this hybrid approach means they will enjoy the same seamless experience (as the private cloud), as well as all the institutional controls and enterprise level deployment that they need.

It’s difficult to be 100 per cent native public cloud but there are workflows and applications that work well. “We find that clients end up straddling the two: they have a need for the private cloud for certain workflows and for products, such as email through Office 365, that work really well in the public cloud,” says Ponzeka.

This comes back to the same inherent problem most alternative fund managers have: they don’t necessarily have the technology expertise or horsepower to deliver something that is secure and scalable enough to consume. The last thing they want to do is spend time building solutions and deploying them in AWS, and worrying about security or data leakage.

As Ponzeka concludes: “We can say to a client, ‘Here’s our connectivity to the public cloud, which we manage over private lines, and here’s the infrastructure we are building at the back-end to allow you to consume the public cloud’. “We make sure the technology meets with their business policy. You still need to configure the public cloud in a way that an organisation can consume and that’s where we add our value.”

"The landscape is definitely changing in that people are getting more comfortable with running directly in the public cloud."

Paul Ponzeka, Abacus Group
possibilities. The cadence that the public cloud has set, most notably with Amazon Web Services and Microsoft Azure, has forced the rest of the industry to keep pace.

“I think we’re seeing that now in the technology arena,” says Ponzeka. “The public cloud has started an arms race as far as technology features, relief cycles and innovations and that gets me excited, from a technology development standpoint.”

Christopher Reeve is Director of Investment Solutions at Aspect Capital, one of Europe’s leading CTAs. When discussing whether the cloud has helped improve the productivity of the investment team, Reeve comments:

“I think it has. Our quantitative research team, for example, just wants to know that they can access computing power when required. In that sense, the cloud has been quite seamless and improved their productivity as a result.

“The other benefit is we don’t see running racks of hardware and maintaining them as our main selling point. That’s not what we are selling to investors. It makes total sense for us to outsource it and have it available when we need. We used to have our own on-site server room but that stopped a few years ago when we moved to off-site co-location centres. Now we are making the next logical step to reduce overheads by outsourcing some of our computing power to the cloud,” explains Reeve.

Bill Neuman is senior managing director of Product and Engineering at Eze Soft. He says that using AWS or a world-class data centre with multiple redundant power connections at each corner of the building was unheard of just a few years ago.

“You can put high-quality product in that environment and create a whole cohesive system. There are so many open-source libraries available today, AI experimentation for making financial calculations easier and more accessible; it’s increasingly becoming a technologist’s world and part of our vision is to make those advancements work for our customers,” asserts Neuman.

Regardless of the cloud infrastructure or the supposed quality of software tools and analytics, the bottom line for any hedge fund portfolio manager or trader is resilience and reliability: i.e. how well does the technology stack perform when the markets getting stressed? Does the technology vendor have the capability to maintain first-rate service levels within the infrastructure to support trade investment activity, no matter how frothy the markets are becoming? That is the litmus test.

“Even if your trading needs are relatively small today or are relatively low-volume, you still need to know that your IT partner and the technology behind them is able to handle periods of high volatility in the market,” says Neuman. “It’s not just a volume capability, but also a reliability element. I’ve heard stories of some IT vendors over the last couple of years suffering network outages and systems shutting down during stressed markets.

“We regularly test our technology as part of our disaster recovery plan to ensure we have a highly reliable system. It’s something that asset managers should be thinking about, as it’s a way to demonstrate to investors that they’ve done their own due diligence and take this reliability issue seriously.”

To best deploy new solutions, and avoid innovating for innovation’s sake, Abacus places great emphasis on partnering with its clients as much as possible.

“We have a dedicated account management team that meets regularly with our clients to go through not only what’s working and what’s not working on the platform, but to let them know what’s coming down the line and what new areas of technology we are looking at.

“A lot of that future looking is driven by those meetings, with clients telling us what they need and us developing solutions accordingly,” explains Ponzeka.

**System glitches and why ‘software intelligence’ is important**

Reliability is something that financial institutions, especially UK retail banks, have...
THINK ALTERNATIVELY.

fund administration
/fund ædˈmiːvəʃən/

noun: administer; 3rd person present: innovation; plural noun: innovations

1. Calculation of the net asset value (“NAV”) including calculation of the fund’s income and expense accruals and pricing of securities at current market value

2. The action or process of innovating a new method, idea, product etc. "Opus redefines the fund administration industry through innovation"

www.opusfundservices.com
Innovations such as self-driving cars and voice activated assistants, for example Amazon’s Alexa or Apple’s Siri, are increasingly becoming the new norm. “Smart Automation” is increasingly becoming the focus for the technology industry. As society evolves to understand and accept these changes, it’s important to understand that “Smart Automation” is very different than simple “Automation”.

Smart Automation combines a deep understanding of workflow with robust granular data to allow highly efficient, accurate, and controlled decisions to be made. For example, “Automation” is represented by the standard cruise control that maintains a car’s speed. Alternatively, “Smart Automation” is the autopilot or enhanced cruise control systems that use cameras, radar and sonar to read and understand the immediate environment.

So why is “Smart Automation” important to the fund administration industry? As a key service provider to alternative asset firms, we deal with complex workflows every day. Many of these workflows relate to transactions that have a high degree of inherent risk. A properly designed administration system will allow for robust data input and milestone tracking, as well as workflow logic definitions. By introducing “Smart Automation” into our industry, we can combine data with business logic and introduce highly streamlined and efficient workflows.

At Opus, we have been at the forefront of integrating “Smart Automation” into our systems to provide cutting edge services to our clients. One example is our banking team and their distribution process. Opus processes thousands of distribution payments each month, and while many of these payments go to individual investors, the majority are paid to retirement account custodians.

By developing proper business logic, evaluating risks, and establishing key transaction milestones and data collection, Opus has been able to create “Smart Automation” to safely handle these high volumes. Using a similar methodology, we have also integrated “Smart Automation” into our investor onboarding process, investor document releases, task management and resource assignment tools, without the traditional administrative overhead.

At Opus, our goal has always been to be the best and most innovative fund administrator. This involves always being a leader in the development of industry changing technology. “Smart Automation” will prove to be one of the most important technological developments our industry has experienced. As an early adopter of this technology, Opus provides more accurate services that are on time, cost effective, and involve less risk for our clients.

Equally as important, this “Smart Automation” is fully scalable to meet the needs of any sized client, surpassing current industry performance standards. It is our company-wide goal to constantly innovate and develop our business to provide maximum value to our clients. Whether you are a new launch or an experienced fund, Opus Fund Services has developed technology that allows our business to provide superior fund administration services to all managers, at a fraction that the incumbents charge. You don’t have to be “Smart” to recognise the value of more service for less money.
These IT glitches are often caused by poorly built software or software upgrades, which are insufficiently tested or checked before going live.

Lev Lesokhin is VP of Strategy at CAST, a pioneer in software intelligence which financial organisations and global exchanges use to produce reliable and resilient software. Lesokhin argues it is time for the financial services sector to pause and rethink whether its heritage risk prevention strategies are capable enough to handle today’s sheer level of software architectural complexity.

“LSE has kept itself out of any negative light for quite some time but exchanges have gotten a lot more complex in recent years as they look to support new order types. There is a systemic nature to these glitches,” says Lesokhin.

The way the IT community has gotten around the fundamental lack of software robustness is to put in place specific protocols to follow when deploying systems. When Knight Capital lost USD440 million in 2012, forcing it to eventually close down, the reason was down to a simple software glitch. An automated, high-speed algorithmic router used to send orders into the market “was intended to replace old, unused code referred to as “Power Peg” – functionality that Knight hadn’t used in 8-years,” according to Doug Seven.2

This Power Peg is what is known as ‘dead code’: a piece of software that is not supposed to be accessed by the system.

“On average, 20 per cent of the code in big legacy systems is dead code. The danger with that code is that it ends up in the wrong library and the application starts executing that dead code.

“There’s a fundamental lack of ‘software intelligence’ within financial services institutions, knowing how these systems are structured from an end-to-end standpoint,” suggests Lesokhin. He says that the UK’s financial industry has been decimated by these glitches.

“At LSE, it looks like it was more of a data corruption problem but I think it is part of a wider, systemic issue. I think the exchanges are less affected by this than high street banks, who have to adapt the functionality they bring to customers with the rise of challenger banks (which are more technologically agile and have no legacy IT issues). Many of them still have core legacy systems that they haven’t changed in 20 years and it is very hard to replace those systems.”

What ends up happening is that financial institutions layer cake their IT and that’s where the complexity comes in. It’s not that the legacy systems can’t keep pace, rather the business environment that banks face today requires them to make changes and put these extra layers of technology in place, and as Lesokhin explains, “the traditional methods of controlling the robustness of those layers are not working anymore.

“You have to test and test, but the testing community can’t keep up. There are more paths through a bank’s IT system than there are stars in the known universe. The likes of Google and Microsoft do a lot of internal, system-level analysis to engineer robustness into their software. That’s something the banks haven’t figured out a way to do yet.”

Although most hedge fund managers might think: ‘Well, I don’t have these legacy IT problems so why do I care?’, there’s a wider issue at play. If their trading counterparts – be they investment banks or...
Risk data is usually trapped in spreadsheets, disparate databases and static reports. With Axioma, you’ll visualize your equity and multi-asset class portfolios in a different way and gain unparalleled insight.

- Make Informed Investment Decisions
- Know What Factors are Affecting your Risk Profile
- Prepare for Unpredictable Market Behavior

Axioma partners with many of the world's largest hedge funds to drive superior performance in portfolio construction, risk management and regulatory compliance.

Learn more at axioma.com
Over recent years, the continued popularity of passive funds has been a key factor in why hedge fund managers have seen their margins shrink, not to mention the increased costs of regulatory compliance. Many are looking to technology to improve their operational efficiency and for third party vendors to simplify things for them.

“To help control fees, hedge fund managers are outsourcing non-core functions, including the risk services; not risk management, but the risk calculation engines,” says Jason Connelly, Managing Director, Business Strategy & Execution, Axioma. Connelly formerly worked at D.E. Shaw and MSCI Analytics, where he ran the global managed services business. “We've had a number of recent wins where managers have come to us and asked, ‘We've been doing this in-house since day one, what can you do for us on the risk calculation side?’

“It goes deeper than just calculating the numbers, however. They want speed and scale, and that's where the cloud comes in. We can provide a risk and performance service that will scale with them, allow their research teams to do back-testing on demand without having to connect their own data centres and they can plug into different pieces of Axioma using Axioma's APIs.”

Clients can configure Axioma's multi-asset class risk management system and the reports it generates in ways that are consistent with their own assumptions and viewpoints, using their own inputs rather than those of a third party. Every module on Axioma's platform is available through an API. Clients can plug in to a stress-test module, for example, or alternatively, Axioma can package up solutions to solve a specific pain point for a client. As Axioma's slogan states, ‘Flexible is better’. Connelly says that this API-first approach provides a deeper, tighter integration.

“We want to understand how clients are getting data collected and sending it to us because we’re always focussed on the total cost of ownership. If it’s painful to access our system, clients are less likely to continue using our services. We want to be fully integrated into our clients’ ecosystem. We are making it as easy and as cost efficient as possible to do risk management, operationally speaking,” explains Connelly.

Whilst outsourcing has been an obvious trend the last few years, technology has improved so much that the pendulum has started to swing back the other way. Some of the bigger hedge funds want their cake and eat it; that is, they want to enjoy the benefits of outsourcing and also feel like they have the right tools internally to optimise different workflow tasks in the front and middle office. In that regard, Axioma provides clients with tools to make them more self-sufficient.

“None of our clients are ever going to outsource risk management. They still need to understand where the risks are coming from and how to remediate that. Managers want full transparency and ease of use so we are creating visualisation tools where start of day, they see a dashboard and they can link back to the incoming data if necessary.

“We do the heavy lifting packaging our expertise through technology, and we are further giving them the necessary tools to take control of their workflows and optimise their risk management processes. Clients have front and middle-office connected risk and return, data consistency, and one set of numbers. That operational efficiency allows managers to focus on their core tasks,” outlines Connelly.

As Axioma has built for the cloud natively over the last seven years, they have been able to optimise it and meet even the stiffest of challenges. One manager needed a large number of securities by the start of day. Connelly says that they were able to achieve this, just in time. The client was happy but then they said, ‘Can you do it in half the time?’

“We took a look at how we were running on the cloud, looked at the client’s positions and were able to fine tune it, such that we did in fact cut the time by 50 per cent, at no increased cost to us or the client. Their response was, ‘We didn’t think this was possible!’ The cloud has had some enormous benefits to our clients,” concludes Connelly.
we are using cloud computing for activities such as strategy research. If we need to run something that is computationally intensive it makes a lot more sense to lease that computing power (on the cloud) as and when we need it.”

Alpha generation via alternative data
One could argue that for another fast emerging technology trend – the use of alternative, unstructured data sets – a similarly disciplined approach needs to be taken. Much is being made of the potential for these data sets but hedge funds should think carefully about how to ingest them, which third party data feeds to consume, and whether they can genuinely generate any meaningful trading signals.

Taking a slapdash attitude to using alternative data sets, just because it is ‘on trend’, is not going to benefit anyone over the long-term.

Still, it is an interesting development, made possible only by the sheer increase in computer processing power. As outlined by Deloitte in a recent white paper entitled “Collective intelligence investing: Alpha generation via alternative data brings new risks”, investment managers should keep the below points in mind when adopting alternative data:

• Build a well-rounded talent team. A combination of data scientists, engineers, consumer experts, and finance professionals could help create a competitive edge from alternative data. Consider hiring multi-skilled professionals with both data science and security analysis expertise;

• Have an integrated insights team. An integrated team of data scientists, engineers, behavioural economists, and financial analysts collaborating with each other would be well positioned to derive new insights;

• Establish a fluid data architecture. The technology, storage, and computing requirements for alternative data are vastly different. Having a system in place to handle multiple data feeds via API along with scalable processing power could be prerequisites for successfully managing alternative datasets.

trading firms like the former Knight Capital – or exchange partners cannot be trusted, because of the software intelligence issue Lesokhin refers to, future problems will always be a potential threat.

To mitigate that threat, and avoid unnecessary glitches, the way software is managed needs to change. One important step is to introduce engineering discipline into the technology development process.

“Traditional IT management has been to outsource to a favourite vendor but if you have an engineering mindset you think more carefully about what these systems look like, how robust they are, etc. In the end it becomes a technology management-led issue.

“At Apple, the number of software bugs has increased since the passing of Steve Jobs. Jobs was completely focused on quality control. He would reject products constantly if they didn’t work properly. Everything just worked at Apple, there were rarely glitches.

“Fundamentally, you need to introduce an engineering approach and establish software intelligence from the top down, with management driving the robustness of your systems,” advises Lesokhin.

Over at Aspect Capital, Reeve says that they look at technology from an enhancement and a resilience perspective; resilience with respect to things like outages on exchange systems or broker systems as well as with its own internal systems.

“We don’t want to have any interruptions on the markets we trade. We do a lot of work on this. I sit on our operational risk committee where we try to anticipate potential operational risks as well as oversee testing on primary and back-up systems.

“We run all of our production systems out of two data centres located outside London, which replicate each other, but
There are many different online platforms springing up for fund managers to tap into for alternative data purposes. Broadly speaking, these can be categorised as open communities (Seeking Alpha, eToro), digital expert communication networks (SumZero), digital expert contribution networks (Harvest Exchange) and crowdsourcing platforms (Estimize, Quantopian).

“If you’re looking to incorporate Estimize, for example, it’s not very different from taking in an earnings estimate from one of the sell-side banks,” says Doug Dannemiller, Research Leader, Investment Management, Deloitte Center for Financial Services. “They might have arrived at that number differently for a particular stock price, but it works almost exactly the same way.

“Transition that to if you do it yourself. Instead of just managing a vendor risk you then have to manage and understand the dynamics of the participants in that ecosystem; you have to roll up your sleeves and understand the reliability of the data going forward, and you might need to sanitise the information to make it acceptable for investment purposes.

“If you go one step further and set up your own crowd platform and try to draw signals out of it, then you take on an additional risks from all perspectives; data integrity, provenance, material non-public information, etc. And you run the risk of keeping that crowd viable long enough for the time you want to use it and generate signals.”

The point about MNPI is critical as it exposes fund managers who use it to potentially harmful legal and regulatory risks. One only has to see what happened to Cambridge Analytica to appreciate this.

Asked whether the proliferation of alternative data could lead to the opening of Pandora’s box, with fund managers unwittingly using MNPI to generate alpha, Dannemiller responds:

“I think there are some ticking time bombs. Innovators (such as quant hedge funds) saw the opportunity for alpha and went headlong into it, although so far no investment firm that I’m aware of has blown up as a result of using alternative data.

“But it is a problem. Investment managers have to avoid MNPI at all costs. In a firm like Estimize, it has algorithms and user input profiles that can scrub and eliminate any signal generated by MNPI. The rules for MNPI as they translate into the cyber world don’t necessarily apply. Just because somebody with a server and some bot-programming capability can get data does not mean it is public. The rules on what’s public and non-public are difficult to navigate. They need to evolve.”

Conclusion

At Eze Soft, Neuman is a firm believer that technologists should try to reach for the stars but at the same time be pragmatic and take the small gains as they arise. He says that the team is currently experimenting with machine learning tools for portfolio construction.

“Gary Kasparov said a machine can beat a man but a machine plus a man is better than either. Augmenting human intuition with AI and machine learning tools to provide the right set of data points [for investment decision-making] for the portfolio manager is probably going to be the first level of evolution in front-office trading.

“I also think this could apply to the back office. What if we could use technology to have real-time connections between the trading and accounting teams so that throughout the day, the back office gets a jump on end-of-day activities? There are interesting applications that could apply across the whole firm, front to back,” says Neuman.

Each year, Eze Soft runs the Innovation Challenge for a few days, designed to encourage its development teams to set their imaginations free and work on whatever they think could be the next best game changing technology tool.

“Often, a lot of valuable insights come out of that; voice trading over Amazon Alexa, connecting our platform to a cryptocurrency trading platform, developing ML-based matching tools and so on. It gives our developers a chance to explore the realms of what’s possible, and encourages them to always keep innovating,” concludes Neuman.