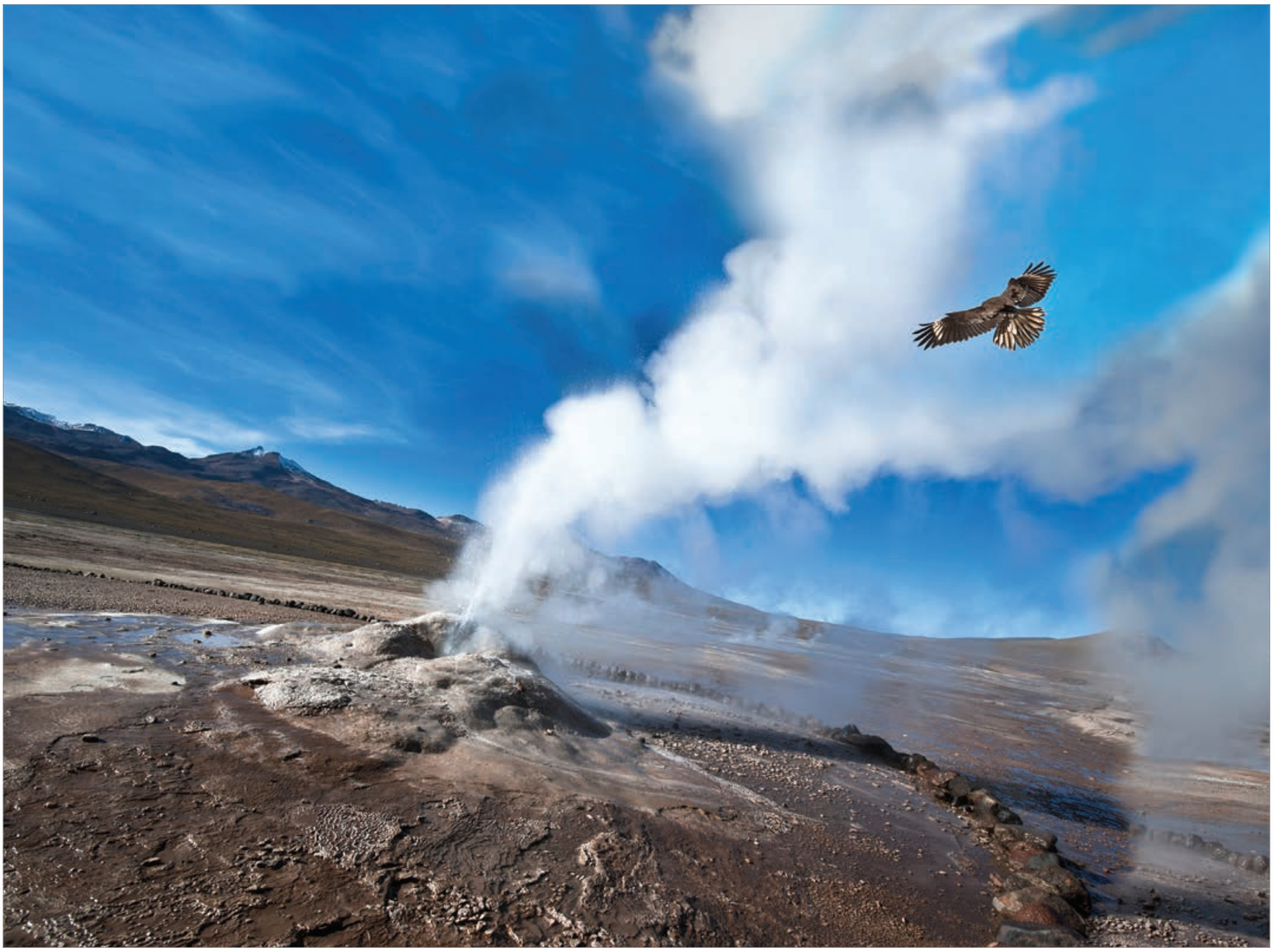
FUND TECHNOLOGY AND OPERATIONS, NORTH AMERICA

PUBLISHED BY Clear Path ANALYSIS

DECEMBER 2013



Examining the role of technology solutions and outsourced service providers in a world of heightening client, regulator and stakeholder demands.

SPONSORS

KURTOSYS
BEAUTIFUL SOFTWARE

MEDIA PARTNERS

ie. innovation enterprise

ATMonitor
sharing trading intelligence

CONTENTS

FUND TECHNOLOGY & OUTSOURCING, NORTH AMERICA

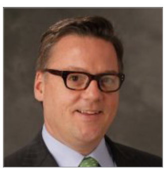
Luis A. Aguilar
Commissioner, Securities & Exchange Commission

Scott Blandford
Senior Managing Director and Chief Technology Officer, TIAA-Cref

Jeff Hendren
Chief Executive Officer, Kurtosys Systems

Ian Battye
Chief Operating Officer, Russell Investments

Craig Gatten
Managing Director, Global Head of Data Management and Reporting, Manulife Asset Management Operations



David Giroux
Managing Director, Global Operations, PineBridge Investments

CONTENTS

FUND TECHNOLOGY & OUTSOURCING, NORTH AMERICA

Brian M. Baczyk
Chief Data Officer, Conning

Patrick J. Kinnucane, Jr.
Vice President, Global Client & Investment Reporting, T.Rowe Price

Bill Wilkinson
Senior Managing Director, Asset Management Services, TIAA-Cref

Geoffry S. Eliason
Chief Operations Officer, Peak Capital Management

Stephen Gouthro
Director, Investment Services & Operations, Putnam Investments

Todd Healy
Vice President, Director, Head of Investment Operations, BMO Asset Management Corporation

SPONSOR

www.kurtosys.com

Kurtosys provides client reporting and marketing communications technology for asset managers. Many of the world's largest investment firms trust Kurtosys tools to help them engage with retail or institutional investors and advisors. Our presence spans four continents with offices in New York, London, Cape Town and Gurgaon (India). Known for the speed and simplicity of our solutions, Kurtosys aims to revolutionize client service and fund marketing.

MEDIA PARTNERS

ABOUT CLEAR PATH ANALYSIS

Clear Path Analysis is a media company that specialises in the publishing of high quality, online reports in the financial services and investments sector.

Noel Hillmann
Managing Director & Head of Publishing

Libby de Fraine
Marketing & Operations Manager

Jim Allen
Head of Digital Media

Jessica McGhie
Publisher & PR Manager

Jennifer Menoscal
Marketing Assistant

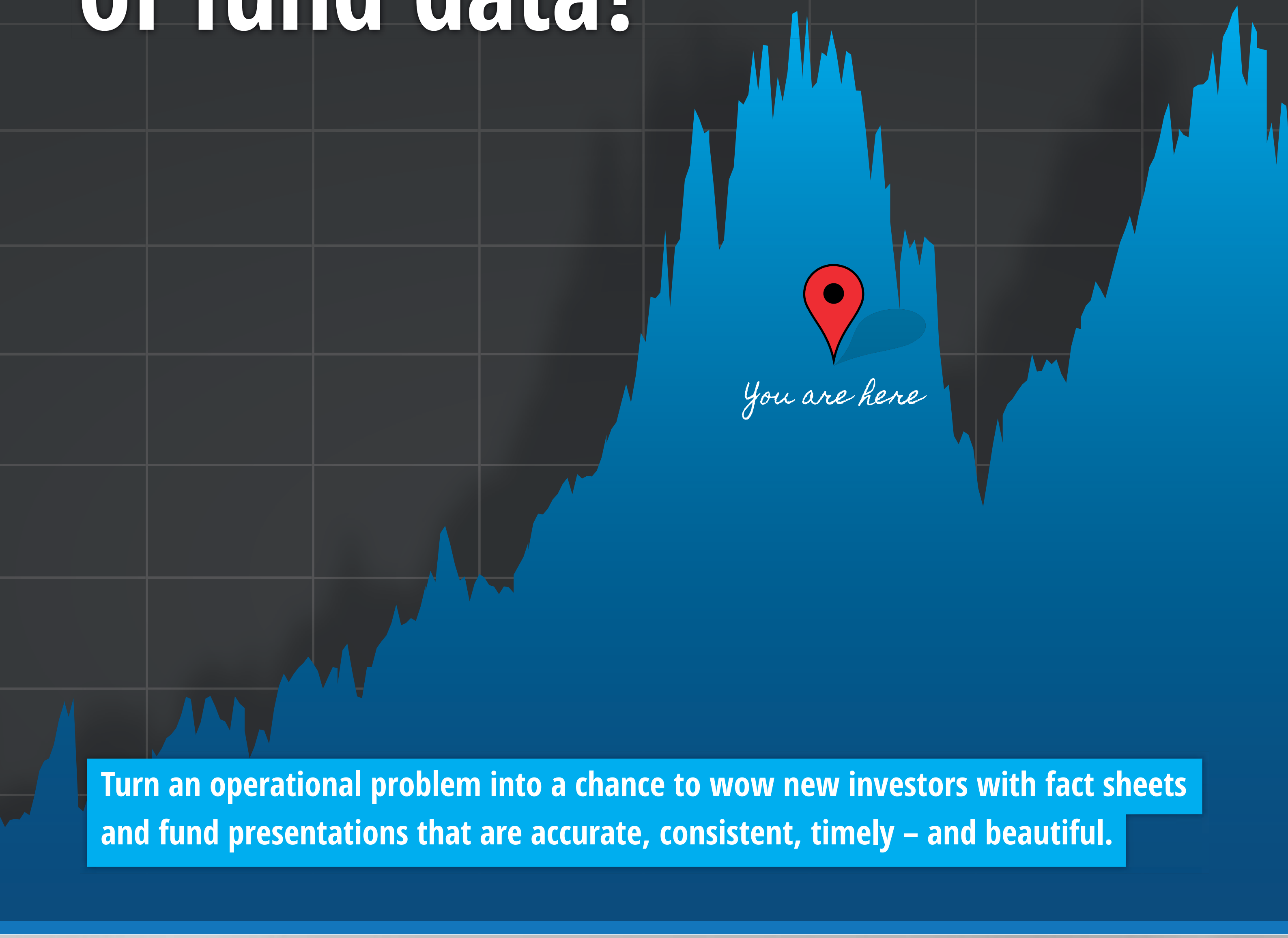
FOR MORE INFORMATION: | **W:** www.clearpathanalysis.com | **T:** +44 (0) 207 822 1801 | **E:** marketing@clearpathanalysis.com

TELL US WHAT YOU THINK

We value your interest as without our readers there would be no reports. Please fill out our short survey to give your feedback. The survey will take approximately 3 minutes and all feedback is anonymous. Click HERE to access the survey.

Thank you for helping our reports be the best they can be.

Are you lost in a mountain of fund data?



Turn an operational problem into a chance to wow new investors with fact sheets and fund presentations that are accurate, consistent, timely – and beautiful.

+ Unified Data Model reduces risk by ensuring that data is accurate and consistent
+ Quality rendering with Adobe InDesign® Server: complete layout/styling control
+ Secure, compliant approval process: role-based permissions; auto-email notifications
+ Maintain a full audit trail including document history and versioning
+ Secure APIs to automatically distribute factsheets to Fundinfo.com and other channels
+ Embed QR codes in PDFs: investors get direct access to your site via mobile devices

Free E-book:
Fact Sheet Production - Work Smarter Not Harder

kur.to/clear

KURTOSYS
BEAUTIFUL SOFTWARE

SECTION 1

THE ROLE OF TECHNOLOGY AND OUTSOURCING IN AN ERA OF HEIGHTENED REGULATION

1.1 WHITE PAPER

Managing Dodd Frank, Form-PF and tomorrow's regulation, today

Luis A. Aguilar
Commissioner, Securities & Exchange Commission

Thank-you Commissioner Aguilar for taking time to share your views on the effects regulation will have on the North American asset management sector.

We understand that your opinion towards additional money market reforms, from those proposed for the fund management industry in 2010, altered after the SEC commissioned their own study into whether the additional reforms would prevent money market runs. What fundamental challenges do you see the US fund management sector facing that calls for added regulation?

I wouldn't say that my opinion changed. I would say that in considering further reform to money market funds, it has been my consistent position that the Commission, as the independent agency responsible for protecting investors and overseeing the U.S. securities markets, has an obligation to make sure that it is as informed as it can be before acting. The 2010 amendments went a very long way in strengthening Rule 2a-7, the principal rule that governs money market funds. In considering whether further reforms were necessary, I held the view that the Commission had to, among other issues, analyze and understand the impact of the Commission's 2010 amendments to Rule 2a-7, and the potential impact of additional reforms on investors and the cash management industry as a whole. To that end, I had for some time requested the SEC staff to conduct a study on these issues – a request in which a majority of the Commission concurred.

The staff's report was delivered to the Commission on November 30, 2012, and was made public at my request. (See "Response to Questions Posed by Commissioners Aguilar, Paredes, and Gallagher" (November 30, 2012), http://www.sec.gov/news/studies/2012/money-market-funds-memo-2012.pdf) The study concluded that the 2010 amendments would not have been adequate to prevent the systemic risks we saw in 2008. The study's findings allowed productive discussions to ensue, and the staff developed a proposal that the Commission unanimously voted to approve on June 5, 2013. The deadline for submitting comments on the proposal was September 17, 2013. The Commission and our staff are now reviewing and considering the information provided by numerous commentators and determining what challenges money market funds may be facing and what further reforms may be appropriate.

How can the US fund management sector be made safer for investors and do your views differ between managers serving institutions over those investing retail client capital?

Investment managers registered with the Commission under the Investment Advisers Act of 1940 are subject to a fiduciary duty that requires them to put their clients' interest first. I believe that such a fiduciary standard is an appropriate standard for both institutional clients and retail clients. The fiduciary standard has served advisory clients well for many years. If you are giving advice to an investor you should always be bound to do so in the best interests of the client. While the scope of service may vary between clients – whether institutional or retail – the standards of loyalty and care in providing that service should not.

Given that certain funds are less likely to be subject to runs, particularly those with established capital lock-up periods such as private equity and infrastructure, should all managers be treated equal or can regulation calling for additional disclosure be avoided for certain asset classes?

The disclosures required of funds may differ as a result of the manner a fund is offered to investors – whether in a registered offering or pursuant to one or more available exemptions from registration. Registered offerings usually require the most detailed and prescriptive disclosures. Of course, different exemptions have different disclosure requirements, sometimes depending on the nature of the offering and the type of investors. Various disclosures may also be appropriate, depending on the different ways that funds operate and their different investment objectives and strategies. While a "one size fits all" approach to disclosure may not always be appropriate, that should not detract from the responsibility of providing fund investors with access to the disclosures they need. The information an investor receives should allow them a fulsome understanding of the terms of their investments and of the fund's objectives, risks, fees and operations, among other information that may be appropriate, depending on the nature of the fund and the type of offering conducted.

Disclosure of trading and capital flow information will for many managers be equal to sharing of commercially confidential information. How would you propose to re-assure managers that allowing insight into their fund asset flows will not compromise their commercial sensitivities?

In promulgating rules, including rules that may require disclosure of certain information, the SEC undergoes a formal process of "notice and comment" that informs the public of the regulations that are proposed and provides an explanation of the reasons for the regulations and the goals they are meant to achieve. This process allows the Commission to obtain information from the public, including market participants, that allows for informed decision-making as to the cost and benefits of any rule. This would include consideration of the impact that would result from public disclosures. The SEC is very mindful about its responsibilities when promulgating regulations.

Our rulemaking process is open and transparent, and we seek and receive input from a wide array of interested parties. The staff carefully considers these comments in recommending that the Commission adopt a rule as proposed, modify the rule in response to input provided by commentators, or take a substantially different approach to the proposed rule.

The SEC also routinely conducts an economic analysis with respect to our rulemaking, which may include considering any effects anticipated from disclosure of sensitive commercial information, as well as consideration of alternatives to minimize any adverse impact from such disclosure.

These processes help the Commission to design rules that appropriately take into account the impact on market participants, as well as the benefits intended from such rules.

In addition, when we promulgate rules that require market participants to disclose information to the Commission, we often provide that certain information will be kept confidential, subject to applicable law.

Given any additional costs incurred by fund managers to meet regulation will likely be passed on to investors, or at the least limit the opportunity for managers to charge the lowest fees possible, do you agree that investors will ultimately lose out on returns?

All regulations have both costs and benefits. As stated above, it is important for the Commission to understand both the costs and the benefits in promulgating its regulations. We conduct an economic analysis of our rules, and invite the public to provide input on the economic effects of our regulations, which we carefully consider in formulating our rules. In considering a particular rule's potential costs and benefits, one must understand that while there may be costs in having regulations, there are also costs when we forego regulations. For example, it's been estimated that the market crash of 2008 cost the American public $12.8 trillion and the post-mortem of the market crash has made it clear that much harm was caused from the unregulated derivatives sector.

"while there may be costs in having regulations, there are also costs when we forego regulations."

1.2 INTERVIEW

Asset managers were set-up to manage money so does the cost and resources required to develop technology in-house still make sense?

Interviewer

Noel Hillmann
Managing Director and Head of Publishing, Clear Path Analysis

Interviewee

Scott Blandford
Senior Managing Director and Chief Technology Officer, TIAA-Cref

Noel Hillman: What is your background and current role within TIAA-CREF?

Scott Blandford: I manage the technology for our customer facing businesses. Whether it is our institutional retirement plans or the technology that supports our individual investors, I manage the systems from the front-ends to the middle office to the call centre, the books and records, our outsource partners, etc. I work closely with the teams who manage our asset management technology. I am actually an internal customer of theirs.

Noel: Effectively the role within TIAA-CREF is split in that you are looking at the retirement customer facing side and then you have a colleague who looks at the segregated accounts and other elements, is that correct?

Scott: Yes - exactly and my colleague works closely with our traders and fund managers.

Noel: How has the fund management sector changed over the past five years from a technology perspective?

Scott: I have seen that the farther back you move into the core engines, the less change there has been and the more commoditized the technology has become. In many cases, you can buy an off the shelf package and customize it to do various tasks. As you move forward towards the front-end technology that people touch, the more investment you typically see in customization and "building your own". This is largely a result of the fact that there is an increased demand for more and more information - which on the one hand is good but on the other hand people are drowning in a sea of information.

As a retail investor, if you try to figure out what to invest in today, the choices you have between mutual funds, annuities, ETFs, unregistered funds and so forth has resulted in a lot of powerful technology to help support that choice - but it is overwhelming to the 'regular Joe' investor. In order to be a provider that differentiates and creates a simple understanding of your products, there needs to be a match between your products and what an investor really needs. This means that there is a lot of art involved -- and value -- in creating the required technology to make this match. In 2013 when a customer interfaces with your product, for the most part it is without you there. Most of the time, all they have is your technology; it is not you delivering reports to a customer or directly explaining that product to the masses. With the individual investor population, they are learning about your products online or on their mobile devices but essentially on their own. This means that if you want to tell a differentiated story with your front-end technology the only choice is to do it yourself.

Noel: Have you made any significant changes in your systems considering the amount of data that is now coming at you and the amount of data that needs to be processed?

Scott: Yes but it is largely on the channel side and focused on trying to make the experience simple. It is the combination of the pure IT work plus the web design and usability, as we do have some fairly complicated products and are always trying to find ways to make those easy for people to grasp.

Noel: On a value versus cost basis, given the enormous amount of data that there is, do you still benefit from housing technology and data infrastructure in house versus relying on a specialist external provider? Do you feel that the value comes from having these systems in house or having them outsourced nowadays?

Scott: We actually do both, so depending on the platform or area it may be outsourced, packaged in-house or custom built. We continually re-evaluate what the best fit is for any given platform and it really does depend on how important it is for us to differentiate and how important it is for us to change it when we want. Typically, the farther away from you it is the harder it is to change and make it work for your particular needs. On the one hand you might have a commodity system and everyone has the same capability; the customers don't differentiate on it and it never changes. That is a great thing to outsource, but on the other end of the spectrum is an item that is an important differentiator; it's changing all the time and our customers care a lot about it, which would be something we would want to manage in-house.

"The pressure is definitely on for increased transparency."

Noel: Have you noticed any particular pressures emerging where previously housing internally was very easy but due to growing complexities are becoming harder to manage in-house?

Scott: Not as it relates to the storage piece because the same time that the amount of information is proliferating, the storage costs are going down and the storage providers are getting pretty good. One area where we get help is for our market data and research that allows us to show really robust mutual fund and investment information to our customers. As we are an 'open architecture' provider for our retirement plans, it does not matter who the manufacturer is; we use our software (a combination of outsourced and home-grown) and it works beautifully. However, this decision wasn't really based on the complexity of storing the information. In this case, we didn't believe that there was differentiated value in how we show an equity chart versus how somebody else does.

Noel: Are you seeing greater pressure placed on your investment activities and therefore having to outsource some of the work related more to client servicing or investment reporting?

Scott: The pressure is definitely on for increased transparency. People always want more data. And as the world gets comfortable with more data it's natural for them to want even more. We haven't seen evidence that the best way to provide this information is through outsourcing more, though, because to some extent -- unless the place you're outsourcing to is able to create the same reporting and transparency that our customers wants -- it may even become harder. Vendors and outsourcing aren't a cure-all. Our approach has been to make what we do more transparent – whether it is internally-developed systems, in-house packages, or software as a service.

Noel: Is there a point where if you could no longer achieve the economies of scale or provide the quality of service compared to competitors then you would start to look at outsourcing options?

Scott: It goes back to whether it is a point of differentiation for us and whether it is something where we are big enough to get the economies of scale. I can think of examples where we believed investors no longer valued a differentiated function, and if we are not big enough to achieve adequate scale, we decide to not invest there in custom development and instead to outsource.

Noel: You mention how important it is for you to be close to that particular area or function. Does outsourcing mean a lack of control?

Scott: Typically the value proposition for outsourcing starts with a provider that has a large, established service bureau. They have a single platform and want to put us on it with a lot of other clients to achieve the economies of scale that make their business work. Of course they are able to separate out our customer information from their other clients so there are no security concerns. The way they get the scale is through that single footprint, so that when they build future enhancements for you they can leverage for everyone else and vice versa. There is a lot of upside to this model in a domain that is slowly changing.

Where this can get you into trouble is if you have an important client or market event that needs a quick change but instead of being able to quickly deploy some internal staff to implement the change, it's now a case of talking to the provider and negotiating with them. Simply put, their priority is not always our priority. They need to understand the impact to all of their other clients which in turn makes it harder and slower to adjust to any single client's needs. Having said that, if it is a domain that isn't changing very often you can usually get enough lead time to manage it. However, if it's in a differentiated area where customization for your clients and making timely changes is important, it may be tough to outsource.

Noel: There has been a lot of talk about managed technology services, whereby managers still operate their technology but on a Software as a Service (SAAS) basis with a third party. Is this a particular model that you have looked into and given an increased upgrade to technology, do you see it as a potentially productive option for a business of your size?

Scott: It is just capability by capability, so that for market data and research for example, that is exactly what we do. We outsource that capability to a great SaaS firm that is plumbed into all of the exchanges and data providers. They have built a great library of user experience widgets for the web. They

"It goes back to whether it is a point of differentiation for us and whether it is something where we are big enough to get the economies of scale."

run their SaaS out of their physical plant on their platform which they improve all the time and it has worked out great for us. We have invested in integrating it closely with our systems so the user experience is seamless. Customers love it and they have been very easy to work with. One of the reasons it works so well is that they have been doing it for a while and they are a top provider in their field.

Noel: **Would you consider a rollout of the managed technology approach across every item of operations, if an external provider was able to provide an optimal system with better solutions? Is this the direction that you see the industry moving towards?**

Scott: You'll see that the further any function moves towards being a commodity service the greater the push out of those operations there will be. The battle of the future will be on the user experience and the technology that directly touches customers. This is a trend that we have been seeing for a while.

If you go back far enough you will get to a time where if you wanted to put something up on the internet you had to write your own web server. People don't do that anymore as those items have been commoditized. The advent of the cloud and so forth has just taken this to the next level. This is part of the steady progression that happens as these items become more standardized.

Noel: **As sophisticated technology becomes much more of an ingrained requirement to daily fund management operations, do you believe that we are going to see a split whereby only the larger managers will work with very customized solutions, much like the segregated accounts versus pooled funds option, and that smaller managers will be forced to use commoditized solutions? Do you see an alternative where vendors bring down the cost of customized solutions across the board as demand grows?**

Scott: The bigger fund management providers can invest in the aspects that differentiate them because they have the scale. Firms like ours will be able to do that at a price point which is better than the smaller places. The smaller providers will continually be challenged and will struggle to compete on the differentiating elements because they won't have the scale and savings that allows them to invest. This means that they will have to find alternate ways to differentiate which will be hard - particularly in the Defined Contribution space as there has been so much consolidation there already. If you don't have the size then your only choice is to buy a package somewhere and customize what you can afford - but in the end without the right investment in differentiated technology you are really just trading on your brand and potentially your field capability.

Noel: **We can conclude there. Thank-you Scott for your time, it is most appreciated.**

"The battle of the future will be on the user experience and the technology that directly touches customers."

SECTION 2

MANAGING YOUR TECHNOLOGY SPEND THROUGH THE BUSINESS CYCLE

ROUNDTABLE

Developing an optimal multi-asset and strategy investing platform in an era of greater investment diversification

ROUNDTABLE

Developing an optimal multi-asset and strategy investing platform in an era of greater investment diversification

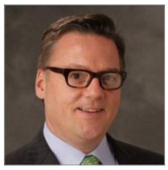
Moderator

Noel Hillmann
Managing Director and Head of Publishing, Clear Path Analysis

Panellists

Ian Battye
Chief Operating Officer, Russell Investments

Geoffry S. Eliason
Chief Operations Officer, Peak Capital Management



David Giroux
Managing Director, Global Operations, PineBridge Investments

Noel Hillmann: Thank-you for joining me for this debate.

I'd like to start by asking the broad question, how do you approach multi-asset investing from an operational perspective? Are your operations done internally or do you have a large reliance on external partners?

Ian: Russell is a fiduciary manager, as well as an asset manager and our corporate goal is to be recognized as a leader in multi-asset solutions. While the term 'multi-asset' may be new to some, managing the operational aspects of multi-asset portfolios is something Russell has been doing for nearly 40 years for our institutional outsourcing client base. As of September 30th 2013 we had $250 billion in AUM (Assets Under Management) of which approximately $110 billion is in multi-asset AUM. Our operations structure integrates our tenured internal capability with best of breed external providers and delivers operational transparency, forming the basis for delivery of the most relevant investment outcomes for our clients.

Geoffry: Peak Capital Management is a separate account manager located in Colorado and is a SEC Registered Investment Advisor (RIA) with over $100m under management. We currently have three different separate accounts all of which implement a multi-asset approach ranging from 100% unconstrained fixed income to a balanced strategy and finishing out with a growth strategy. Operationally our work is done both internally and externally depending on the audience. The work conducted externally is largely done through unified managed accounts and also internally where the specific client is dealing directly with Peak Capital.

David: PineBridge is an independent asset manager with $68 billion under management. Our globally integrated platform offers core and specialized alpha-oriented solutions across asset allocation, equities, fixed income, private equity and hedge funds. Our approach is to cater to the client specific requirements and needs. We outsource most of our operations but with strong oversight and controls. We leverage the best of breed for our outsource providers.

Noel: In terms of technology and operational complexities that come with multi-asset operations, what types of complexities are you seeing and how is technology aiding the efforts to overcome these complexities?

Geoffry: Our business is evolving and growing immensely. When you look at the research that we draw, the Unified Managed Account ("UMA") platforms have grown 77% over the past two years. With this level of growth come challenges and complexities specific to trade execution. Operationally we work very hard with our strategic partners relating to trade execution to provide the most efficient and cost effective liquidity possible. For us it is important as we implement a combination of exchange traded, closed end, mutual funds as well as individual stocks across our strategies. Therefore minimising tracking error is critical and often times this is a challenge as a by product of liquidity and trade execution.

David: The complexity comes from the fact that you are operating on multiple platforms, based off of asset class, and with several different outsource providers. It is key that we maintain disciplined controls and the ability of collating all of our data to ensure that we have proper oversight and understanding of our AUM and returns, for all of our strategies. To overcome this we have built a warehouse that takes in all of the relevant data that we can then use for performance, attribution and reporting in a consolidated view.

> "The framework has evolved over the last 40 years based on the governance requirements of our business model . . . "

Ian: We have a large global presence so we are offering our multi-asset management services in a wide variety of jurisdictions. Because of this global presence, flexibility and transparency are key requirements both for our clients and for Russell's portfolio management team. Therefore we have created a holistic platform that provides us with the accuracy, the scale, and the flexibility to meet the regulatory and reporting requirements of our global client base. As an example, a separate account client is likely to have their own custodian, so our operational platform was created to seamlessly establish efficient linkages between various custodians across the world. Even clients in the same jurisdiction can have dramatically different goals and objectives, and varying levels of complexity in their portfolio. Our operational strategy was to create a single platform to manage all types of clients and portfolio structures.

Noel: Ian, you mention that in many cases you will take a packaged solution and then develop it in house to fit the clientele that you are working with. Do you find that because you are offering the multi-asset solutions in a number of different regions the technology you use needs to be incredibly flexible?

Ian: Although there are a growing number of unique challenges we face as a result of our global footprint, we have what we believe is a robust operational framework where we utilize best of breed, externally provided platforms as a complement to our internal capabilities. This framework is structured for seamless integration within these diverse data sets. The framework has evolved over the last 40 years based on the governance requirements of our business model, and today, it is the foundation behind the services we offer. We feel that this has allowed us to achieve the appropriate balance between scale and simplicity and the ability to meet the regional needs of all of our clients.

Noel: David you mention the various multi platforms that you operate, could you elaborate?

David: While we do have a global trading platform, there are some distinct systems used to support specific products, such as leveraged loans, which we have not outsourced. Leveraged loans are a unique product supported internally within our business on a system called Wall Street Office. Together with various outsource functions, such as fund accounting, back and middle office, this amounts to multiple platforms. Again, utilizing internal technology to gather this data is critical. Our integrated model warehouses all of the data providing a holistic view of the universe we manage.

Noel: Geoff you mention that you have a hybrid model of part outsourced and in house operations. Have you taken on one technology system which effectively deals with all of the different assets that you are investing into or do you feel that you have the ability to have a number of different systems that cater to different aims?

Geoffry: At this point we do have the ability to work with different systems and the ability to meet clients specifically around their needs and mandates, particularly for institutional clients. Depending on the particular private wealth manager, we work in conjunction with the system that best accommodates them and their needs. It is part of our value proposition, given our size to have that large level of agility to meet the clients in that capacity. As we grow we may not have that same level of agility but at this point we do promote that ability as a value.

Noel: Do you work quite closely with outsource providers to help support this business model?

Geoffry: We do try to maximise outsourcing technology to the greatest degree possible because we feel that this in particular with different platforms gives us the greatest degree of scalability along with the opportunity to grow and take on new business.

Noel: Does your strategy employ alternatives and esoteric assets and how do you manage the different portfolio management reporting and risk management requirements?

David: We do have alternative investments, structured capital, primary and secondary fund of funds, as well as customized solutions for all of our clients as and when required.

> "Our integrated model warehouses all of the data providing a holistic view of the universe we manage."

From a reporting perspective we have the ability to provide custom reporting to meet any necessary requirements As far as internal risk and compliance, or any other internal management reporting, we would get all of this from our warehouse accordingly.

Noel: Have you found that you have shied away from some alternatives because of the complexities and differentiation that is required to adequately manage them?

David: Absolutely not, we continue to move forward in the alternative space and work with our clients and outsource partners as we continue to develop our strategies.

Noel: Geoff, what is your in house view on alternatives and esoteric assets when considered from an operational perspective of managing them?

Geoffry: We are very much in favour and have quite a history of implementing alternatives for the sake of managing liquidity. We do use 40 Act funds to access alternatives but there are pretty stringent criteria for us to use 40 Act funds. We do want the manager to have the ability to take advantage of multi-asset class and multi-strategy approaches as well as long-short strategies but they do need to have a minimum of a five year track record. We will implement no more than three managers at one given time. An important factor is with regards to underlying fees, as with the clients that we are working with they are certainly fee conscious. Often times, particularly in managed futures and CTAs, the fees can be exaggerated and quite high. Often we will be limited to the managers and the alternatives that we access largely due to fees. Of course we are looking for managers and alternatives who have demonstrated a minimum performance over five years, to manage on the down side while producing consistent risk adjusted returns.

Noel: Is there a line that that you won't cross, operationally, when it comes to the employment of particular alternative investments into a strategy?

Geoffry: Absolutely and that would be very specific to the liquidity needs that we and our clients have. We have participated in and accessed hedge fund strategies that acquire residential and commercial loans across the U.S. There are significant lock ups in this market and that would be an area, as it relates to our separate accounts, that would clearly be too far. The exchange traded fund universe has really opened up incredible doors for us particularly when you look at leveraged loans and senior secured debt. We have been fortunate in our strategy to access products such as the Invesco PowerShares BKLN to take advantage of floating rate debt so it would really boil down to the liquidity of the underlying asset but we are certainly open to all forms of alternatives.

> "Our operational process for managing alternatives is similar to our approach within other asset classes . . . "

Noel: Ian, does your strategy employ alternatives and esoteric assets? Given that you are a fiduciary manager as well as a multi-asset manager, do you accept that you need to have many different portfolio management systems and reporting procedures?

> "balanced exposure to alternatives is a critical component to building an efficient multi-asset portfolio."

Ian: From an investment perspective, we believe balanced exposure to alternatives is a critical component to building an efficient multi-asset portfolio. These investments, and the means by which one can gain exposure to them, do impose a number of unique operational challenges. Understanding and managing liquidity and access to timely and efficient pricing are two examples of the components that enable us to most effectively manage portfolios and monitor risk. Our operational process for managing alternatives is similar to our approach within other asset classes, in that it is based on our ability to blend our internal capabilities with best of breed external systems. We seamlessly offer a host of services that include such elements as serving as the investment book of record, pricing these unique securities, managing trade settlement and clearing, handling the management of collateral, and managing the risks associated with investing in the alternatives arena. This is all done within our single portfolio management system.

Another important aspect that runs through both the technology and the operational process is the strategic issue of data.

The efficient collection, storage and interpretation of data is a key part of Russell's overall solution on both the technology as well as the operational side.

The broad question of data is critical when it comes to the management of alternatives i.e. liquidity, pricing, incorporation of your custody and back office capabilities and risk metrics are all driven by one's ability to efficiently manage data. All of this is integrated across our platform, not only for our alternative offerings but for all asset classes.

David: I agree that data is of the utmost importance. Anything that you are doing from a reporting or operational perspective means that you are 100% relying on the data. When you are getting data in from multiple platforms consolidation for reporting the data is key. We put a lot of emphasis on reconciling data, making sure it is accurate and clean.

Noel: Considering further evolutions in technology or external services, what sort of evolutions do you see happening or hope to see in the marketplace that will provide added value to your respective funds?

David: We are always looking for ways to improve the data and streamline it across our global platform. What I would like to see, as we do have a number of external providers who provide both back office operations and fund accounting services, is to see them communicate with each other more closely than they currently do, specifically to reconcile and keep the data clean between themselves. This would take some of the pressure off of the managers. Fortunately I do see this starting to happen with some of our external providers, where they are starting to work together to reconcile and scrub data so that when it comes back to us it is even cleaner. It is important for us to continue to hold outsourced providers accountable for the agreed KPIs. The more a manager outsources the higher you need to raise the bar on the provider and you own oversight controls.

Geoffry: I believe a lot of the evolution is truly a by product of the growth and the re-emergence that we have seen coming out of 2008. One area of importance is keeping up with the changing regulatory environment as we will continue to see greater regulation across the industry. Technology must keep up with those changes as we serve the financial community. The second area I would mention is around reporting as it is a particularly challenging area for all of us participating here. We are implementing multi strategy and multi-asset class solutions for our clients. It is therefore critical that this reporting is consistent as we set out to implement alternatives and new products as they are brought to market, which are really empowering us as asset managers to create more sophisticated solutions for our clients.

Lastly, I would reiterate my comments around efficient trade execution particularly for a multi-asset class approach. This can be challenging as trading evolves and includes greater degrees of high frequency trading and more trade execution moving electronically. Certainly we're trading off the floor as well as implementing products that may be thinly traded and lack some liquidity. We are looking for outsourcing and technology that can keep up because of the growth within those three areas.

Ian: The pace of regulatory change is only going to increase and one of the challenges for any multi-asset provider will be to stay ahead of these changes. Technology enhancements will be a key part of the solution to meet those challenges and Russell will continue to evolve our competencies by utilizing an appropriate blend of internal and external capabilities.

Noel: We'll conclude there. Thank-you very much to the panel for your time and for sharing your views.

> "The pace of regulatory change is only going to increase and one of the challenges for any multi-asset provider will be to stay ahead of these changes."

SECTION 3

GOVERNANCE IN AN OUTSOURCE RELATIONSHIP

WHITE PAPER

Focussing on the fundamental drivers of outsourcing: performance and added value versus cost

Focussing on the fundamental drivers of outsourcing: performance and added value versus cost

Stephen Gouthro
Director, Investment Services & Operations, Putnam Investments

The pace of change in the asset management industry remains an ongoing challenge and a focus for operations and technology leaders. Change factors come from several directions, including the evolving investment strategies, products, regulations, risk management needs, and technology capabilities. Most of us have spent the past few years driving down operational costs to help protect revenue in the weak economy. Today, however, leaders must be prepared to rethink their approach as to how they best enable the business. Looking forward, the challenge will be to drive down costs in order to raise funds for innovation and competitive advantages.

Two trends are clear: competition for assets and market share are pressuring margins, and expense ratios are moving downward. Those factors will continue to weigh on operational costs and force operations and technology leaders to streamline the support structure. Outsourcing is one strategy we use to optimize the support structure. Typically, outsourcing involves hiring a service provider to be responsible for specific functions or moving resources to a location that offers cheaper labor costs, or it pursues a blend of these two arrangements. However, in order to achieve adequate flexibility in the model, asset managers need component solutions that integrate far more efficiently into the firm's infrastructure. In this context, there is much room for outsourcing providers to improve their offerings.

It's clear that many service providers are adjusting by offering component solutions, and most are adapting quickly to our needs in areas such as regulatory reporting. For example, all of the major service providers of custody and middle office services have brought solutions to the market for collateral management, central clearing of swaps, and regulatory reporting. There are also technology solutions available for those firms performing these functions in house. The question is whether these solutions easily integrate into the front office. This integration is not just a technology issue. Asset managers need solutions that bridge the workflow between front, middle, and back office. Ultimately, it comes down to finding ways to simplify, rather than adding complexity to, the process.

Complexity makes outsourcing difficult. As the complexity of products and strategies grows, front office demands are increasing. The proliferation of alternative strategies such as absolute return, go-anywhere equity funds, and risk parity strategies has put pressure on investment support systems, which are often built around single strategy or asset types. The newer strategies merge all of the asset classes together and have made it imperative that risk and reporting systems take a front and center stage in the operations budget. The risk and reporting systems require more advanced methods of explaining the investments held in the funds and how those investments contribute to risk. Beyond the risk and reporting systems, operations leaders need to ensure that they deliver the data and tools required to support the entire investment process, including the raw data to calculate daily risk exposures, performance results, valuation, and compliance. In addition, regulatory issues are increasingly involved in trade execution and settlement, such as the clearing of swap trades. These are the issues we must consider when evaluating the role of third-party solutions. Successfully improving how to plug in third-party solutions will require ongoing collaboration between service providers and the asset managers they serve.

What are the drivers of outsourcing?

A key question is to evaluate the business model and determine where third parties can add value. There are at least three considerations that need to be evaluated in preparation for product growth. The first is expertise. Large or small, asset managers want to focus on their core competency, but they understand the critical role of operations. Those who have engaged in large outsourcing deals know that the expertise of the provider is of greatest importance. Certainly you can successfully outsource operational functions to a provider who has the right experience and technology solution. Where things go wrong is when asset managers and their outsource partners begin to pile on additional functions that do not leverage the expertise of the provider or when those functions are highly customized to the asset manager. When this happens, the front office will experience service level issues. This is why the workflow and technology that links the front office to the provider is so critical.

Consider a data management function that is added on to a larger outsource record-keeping initiative. The provider system won't be well connected to the trading system. Therefore, the asset manager will likely continue to have the staff and market data costs required to manage data in the trading systems, and they will then reconcile that information with the provider. In this example, it is possible that the reconciliation issues begin to affect the speed at which trade execution can take place or, still worse, cause trading errors. The remedy for these inefficiencies in the process is typically a move to add more staff and cost. These are the hidden costs that plague operations leaders' budgets and lead to the question of why so much internal cost continues to exist after a function has been moved to a third party. It is why the provider's expertise alone is simply not enough to justify outsourcing the function. We need providers to bring expertise in the function along with innovative ways their solution can plug into our investment systems.

The second consideration is cost. It's certainly not enough to assume that cost savings are a simple calculation of what you pay internally versus what you pay the service provider. The most obvious error would be to assume the current cost structure is a reasonable benchmark, especially if the model is not optimized. There are also other factors at play. As in the example above with the data management function, there can be hidden and unexpected costs to the asset manager. Those costs tend to creep up after the outsourcing transition is complete as managers identify gaps in the service or weaknesses in communication. For this reason, the cost savings opportunity can be very much overstated. It is critical for the asset manager and the provider to do the upfront analysis of all touch points and data gaps when evaluating solutions and the relevant cost structure.

Third, the other side of the cost debate is accounting for the cost avoidance figures. This is where an outsource provider may be able to add the most value to the cost dilemma. As asset management systems age, the technology costs to replace or upgrade them can be significant. The top providers will be making significant investment in the ongoing development of their technology, given that the technology is core to their business. Asset managers need to invest in the front office technology, not tie up funds in projects required for back office functions.

Even with successful outsourcing deals, there is an ongoing need to manage future costs, which can be unpredictable and subject to volumes, regulatory changes, and product changes. In this context, the duration, service level agreement, and overall fee structure have been managed carefully. The asset managers have to perform their own due diligence and research to predict future business needs.

> "The top providers will be making significant investment in the ongoing development of their technology . . . "

> "operations and technology leaders need to consider the integration points with the front office."

There is much to learn from the insights provided by the consulting community, but asset managers should be careful not to outsource their strategic planning to the consultant firms. Instead, it needs to be a joint effort. Asset managers know their business best and must consider how their core business might evolve in future years and how this will influence the functions that they outsource. In short, the decision to outsource functions must include an evaluation of the current situation along with the future direction that function might take. While you cannot know all of the changes coming your way, you have to ensure a level of flexibility in your operations.

Integration is all about the data

Finally, operations and technology leaders need to consider the integration points with the front office. This is a technology and a data issue, and impacts the workflows between front and back office areas. Large service providers are best positioned to develop standards around the exchange of data with the asset managers. They tend to focus their efforts on the process of collecting data from the asset manager but fall short on their ability to provide data access back to the asset manager. Record-keeping providers are a great example here. If you survey all of the largest players in this space, you'll quickly find the lack of consistency in the offering. This is somewhat surprising when you consider that data access is incredibly valuable to the asset manager.

There is an opportunity for record-keeping providers to differentiate themselves if they can figure out how to provide more robust access to data, rather than rely upon standard data feeds. One challenge is that providers build data warehouse solutions with a reporting application in mind, but that reporting application doesn't represent the full data needs of the manager. In other words, it represents only a portion of the business requirement. The warehouse approach is also often expensive because providers assume they need to add in all of the possible content their asset manager clients might need. The alternative has been for asset managers to build their own data warehouses to collect all of their data from the provider in a series of data feeds. Those data feeds require support, ongoing enhancement, and testing. They also leave the asset manager with the challenge of linking the provider data with their own, navigating through the inconsistencies in data identifiers. What is needed is a component solution that offer programmatic access to various data sets, allowing near real-time access to the data as it changes. This approach would allow workflows and systems in the asset manager to function far more effectively.

This integration challenge and the possible technology solutions that might be available are the keys to improving the linkages and workflows between the asset manager and the service provider. Improved component data solutions will give managers more flexibility in their decision to outsource or insource a function. The most important consideration that operations and technology leaders have is how much control they need to maintain and how much they are willing to give up. Integration should facilitate the ability to maintain as much control as possible over their data and workflow. There is a significant opportunity to improve this data access issue.

As we move ahead to build capabilities to support complex investment strategies, we are also building out more data visualization tools to analyze all of this data. There is much insight to gain from getting more data access and building visualization tools. These tools will drive value to the asset manager and to its clients. What we want is to spend our limited technology resources on building those tools to provide more business insights, which means spending less on the data integration efforts with our outsource providers.

"There is much insight to gain from getting more data access and building visualization tools."

SECTION 4

CLIENT REPORTING AND TRANSPARENCY OF OPERATIONS

4.1 INTERVIEW

How can the fund management industry adapt to the investors of tomorrow?

4.2 INTERVIEW

What is the gold standard in client reporting?

4.1 INTERVIEW

How can the fund management industry adapt to the investors of tomorrow?

Interviewer

Noel Hillmann
Managing Director and Head of Publishing, Clear Path Analysis

Interviewee

Jeff Hendren
Chief Executive Officer, Kurtosys

Noel Hillmann: What's wrong with the business of fund marketing today?

Jeff Hendren: Too many asset managers are not adapting to how products are marketed now. The very process of buying and selling is changing for everything from a pair of shoes, to a car, to a home.

For some reason, asset managers seem reluctant to accept and adapt to these changes. And that means the fund industry is reacting to consumer demands far more slowly than many other sectors.

Asset managers still don't want to disclose what is going on in their fund and how they invest. In many ways they want to stick with the status quo, but that causes problems, because the way they use data isn't keeping pace with customers' buying behaviors. What a client sees and experiences in one sector is what they come to expect from everyone. If fund managers don't deliver that, customers will look elsewhere.

It's a shame, because if asset managers started exploring what's new, and started to take some of these principles on board, I'm convinced they would understand what's happening and quickly get excited by what technology could do, rather than stubbornly ignoring it.

Noel: What has brought the industry to this point? Why are fund managers not paying attention to the technologies and processes that are available to optimize their processes?

Jeff: The finance space was leading the world in the adoption of new technology a dozen years ago. Today it is far behind other sectors. Some of that backsliding is probably down to the regulatory pressures that are on some of these firms, in terms of what they have or want to disclose and in terms of how much information is put out there.

In a historically cautious industry, it's normal to fear that disclosing more through increasingly social marketing efforts will mean opening themselves up to public judgment and some inevitable criticism. The irony is that it's they're failure to disclose the truth that brings the most bad press because customers simply assuming that they're hiding bad news.

Noel: Are you saying then that the problems with disclosure are not as bad as they seem and that it is really the fear of the unknown that is causing finance professionals not to act?

Jeff: Yes it is fear of the unknown. When one fund manager finally breaks through the barrier it will most likely open the floodgates with everyone realizing that they had better catch up fast.

Noel: Do you see any potential pay offs for those early movers who act fairly quickly to address this fund marketing and technology issue?

Jeff: They will be in a much better position and will potentially gain the assets of the younger generation who will be far more open to buying via technological platforms. The first to get technology right have the chance to win the loyalty of the very investors that most fund managers will covet in the future.

Noel: Considering the issues with data, security and delivery what are some of the pain points for fund marketing as you see them?

Jeff: We see data as the most significant pain point of all. It is about having a clear understanding of your data and how you want to use and distribute it. Most offices we walk into are still using Excel spreadsheets to manage their fund marketing data, and in some cases, just coordinating their own fund data needs the input of twelve or thirteen different sources inside the company.

Delivery is perhaps the second most important aspect. Certainly there is pain in distributing data efficiently to multiple channels and pushing it out to different third parties.

But of course when you are talking about fund marketing there is a substantial element of security that needs to come with it. The security really only relates to the permissions, access and timeliness of that data getting to market and ensuring it doesn't get to the market too early. Security should be a hygiene factor, not something that stands in the way of the messaging itself.

Noel: What do you see as the standard output from an asset management

marketing team, particularly around their fund data?

Jeff: Fact sheets are the industry standard, but the fact sheet is a crutch. There are much better areas to focus on than dated fact sheets. Right now, the most important output tactically is when the marketing group is sending out pitch books or presentations. Helping an asset manager distribute fund data in pitch books with nearly real-time data is where the true value lies.

Noel: So automated updates to pitch books — do you see this as the next frontier?

Jeff: Absolutely. With marketing the goal is to get your message in front of clients so there is a clear need to get your data into the hands of a prospect or client as transparently and quickly as possible. That is what people are going to demand. And this can be in the form of live web charting as well.

Clients will want the choice to access this on any device or environment that they choose. This ability of the asset manager to distribute across all fields of communication is going to be what separates the good from the bad when it comes to client servicing.

Clients are demanding new ways of consuming information that the managers aren't yet flexible enough to deliver. Responding to that challenge is the real crunch point.

Noel: Do you come across any particular issues when it comes to using marketing technology for asset managers?

Jeff: Yes, I don't feel that anyone in the asset management industry is trying to measure the value they are deriving from the use of the pitch book, the fact sheet and other documents. There are so many tools out there today that I could use to measure the value I derived from my digital communications and documents, but you don't yet see asset managers doing this. A lot of this is due to regulation, in terms of how an asset manager can market themselves and use tracking technologies, but as an industry, we've got to find a compliant way to solve this.

Even if the fund manager has bought into the idea that there is value in tracking the ROI of their marketing they encounter difficulty around data and content. A lot of the time the client doesn't have their data sorted out.

And lastly, one of the biggest hurdles or delays in automating a fact sheet is often getting the portfolio manager to update their commentary. It's a workflow issue that shows that the company as a whole hasn't yet bought into timely marketing as a vehicle for driving greater distribution and attracting higher AUM.

Noel: Are there other state-of-the-art applications or advances in the delivery of performance data that you see?

"Clients are demanding new ways of consuming information that the managers aren't yet flexible enough to deliver."

Jeff: There are definitely more state-of-the-art advances that can be applied to the delivery of investment performance data,

"Fact sheets are the industry standard, but the fact sheet is a crutch."

but frankly, I don't see a lot of people going there yet. This is an area in which we are trying to break down boundaries — helping firms who start to apply institutional-level access to their performance as a fund. You definitely see this starting to happen with separate accounts — but where the new ground will start to break is how asset managers as a whole deliver investment performance data.

The ability for a separate account holder to get access to their data is where the investment performance data should be driving towards for all funds globally.

This isn't even using state-of-the-art technologies yet, although people are starting to make advances in this area by embedding information into websites and charts. But it's still nowhere near the level of sophistication of other sectors around the world, where you can access information on products and services that you may want to buy instantly.

Noel: What are your best clients talking to you about and what do you see asset managers doing that is ground breaking?

Jeff: The best ones are asking us if there are ways in which they can work with us to allow simple and easy electronic access to the performance data that they are providing their clients with. This could be an API directly from an asset manager in to an institutional or private investor, all the way through to mobile delivery, helping people get automated push notifications on their investment performance data at any point in time. A lot of this involves simply applying advances that are happening in Silicon Valley and starting to figure out how people are consuming information and products, then applying the technology solutions correctly. I don't yet see a lot of fund marketing people pushing these boundaries, but it's starting to change.

Noel: How do asset managers go about applying these new technologies in a seamless way? What are some of the common risks that you see them coming up against, and how might these be overcome?

Jeff: Asset managers should be focusing on how to get the best performance out of their funds. They need to focus on how to build technologies that serve clients but they also need to be honest about how much of that they can achieve from within the organisation. Many look to their internal IT team to sort out these issues, but that team is so far removed from what is happening in Silicon Valley and the rest of the world. It's time to look at what is available out there on the market and transform the business by applying the best technology on offer.

What's key for asset managers, and really all business leaders, is to know and build what you're good at, then buy what you're not the best at.

Noel: On that final point I'd like to conclude. Thank you Jeff for sharing your views.

"Build what you're good at, then buy what you're not the best at."

4.2 INTERVIEW

What is the gold standard in client reporting?

Interviewer

Noel Hillmann
Managing Director and Head of Publishing, Clear Path Analysis

Interviewee

Patrick J. Kinnucane Jr.
Vice President, Global Client & Investment Reporting, T.Rowe Price

Noel Hillmann: Thank-you Patrick for joining me for this discussion.

I'd like to begin by asking, how do you weigh the importance placed by clients on strong client service capabilities versus the returns and risk exposures that are being maintained? Can good service ever make up for poor performance?

Patrick J. Kinnucane: Our goal is to provide both. Clients hire us as a result of an extensive due diligence process, and while the decision to hire is primarily driven by performance within the asset class, elements such as servicing the needs of that client are also reviewed.

Good client service does not always make up for poor performance but it can help. Clients will certainly consider the depth of the relationship and what you build up front with them. Our goal is to form a strategic partnership with them. Our clients are taking a long term view of their investments and our ability to explain what took place in the market and outline the decisions around why and where we invested will allow our clients to understand the rationale behind it. One way to do this through the reporting that we produce for our clients is to not only provide performance and attribution data but also commentary around our investment decisions. Clients also look for material outside of the traditional reporting cycles, during market events, so a quick turnaround is required when responding to these ad hoc requests. We are very focused on meeting our clients' needs in this area.

My group is also responsible for producing materials for client meetings. These leverage much of the investment data contained in that monthly and quarterly reporting cycle. The level of service along with the quality and accuracy of the information can help you through those rough patches.

Noel: What is the added value that you bring to the area of client reporting to help the business case for working with you, when a client goes through the due diligence process?

Patrick: Clients are looking for more quality information in a faster time frame. Timeliness of client reporting is certainly becoming more relevant. The medium through which clients are able to request information, whether through email or web portals, is also very important. We work closely with our clients to understand their needs.

Noel: How have your work flow systems and processes plus links with external partners developed in response to the need to provide higher levels of transparency on operations to clients?

Patrick: The client reporting function is an area that requires constant review. Clients require accurate data delivered in a timely manner. We take a very thoughtful approach to utilizing business process improvement techniques (BPI), like Lean. We incorporate process mapping to identify waste in a process. In addition, we analyze global consistency across our controls and procedures. Technology is leveraged with the use of work flow tools, gold standard sources of data and report rendering. In addition, we have developed external distribution links with key distribution platforms or third party vendors. We are focused on the requirements of our clients and respond to their needs for transparency.

Noel: Have you noticed that there has been a growth in team dealing with client reporting matters? Are there higher budgets being given to the reporting function as a result of regulations that focus on transparency? Has there been an increase in focus by the senior board towards reporting, where previously this may not have been so much the case?

Patrick: Reporting has always been an important component of the client experience. As with any organization you need to put forward a business case when it comes to asking for additional budget for client reporting efforts. In general, we are very focused on what we are asking for in relation to the longer term business plan. When we started to go down the path of developing a work flow tool we had a vision of what that would mean for the organization and the client experience. We wanted to build a tool not only to produce client reports in a more controlled fashion but as a way to get reports out to our clients more quickly. We were also looking at how to integrate this tool within the organization to allow for more transparency. Our client service personnel would have an opportunity to see where their client report was in the process, what went to the client and when it went to them. We are still in the process of further developing and implementing these solutions, but have seen significant improvement in our ability to manage the process and our client relationships better. Where specific regulatory changes require new or revised reports the budget would be provided for those efforts.

Noel: Have you noticed a growth in the budget dedicated to reporting and the team head count?

Patrick: Our head count growth has not been significant as we've been able to automate our processes and make time and resource savings in this manner. The automation that we have undertaken has certainly been measured by the return on investment that we've seen. As a result of these process and technology enhancements, we have been able to support new reporting requirements without any significant additional headcount.

Noel: Has there been a greater reliance on technology and the development of systems to manage the increased reporting that is required?

Patrick: Automation is always at the forefront of our minds as we consider how to deliver a quality, branded report to a client. Technology, in order to help build scale, is necessary and our approach is not to simply throw bodies at the process. Having said that, the skill set from the individuals who support the client reporting function is one that certainly involves a production element but also an understanding of what it is that they are producing. We certainly have seen a lot of benefit and investment in the technology space. The increased level of automation has allowed us to build scale and as a result it allows us to also keep our budget in check.

Noel: Has training for client reporting matters changed or evolved? Have you seen a greater focus on ongoing professional development in the reporting area?

Patrick: We always believe in investing in our people. Our training programs here are extremely helpful in developing not only the specific product knowledge but also the overall skills needed to perform in this space. In addition to this there are certain industry bodies that are looking to put forth certifications like the CFA's Claritas Investments Certificate. We were a pilot participant in this initiative and a few members of my team participated in that particular effort. It was a good step forward in broadening the knowledge of the individuals within the client reporting space and good for the industry.

Noel: Does a trend for outsourcing client service responsibilities make sense as part of an outsourced fund administration arrangement, given the value of client feedback at all points in the customer relationship?

Patrick: I can't talk specifically to the outsourcing of fund administration but where we do use a third party in parts of our client reporting process, we generally retain all direct interaction with our clients. We evaluate each opportunity on its own merits and keep the client central in all of our thinking.

Noel: Why have you decided to maintain that contact with the clients around all aspects of reporting? Are there efficiency improvements you could make by outsourcing that aspect of your operations or would some element of value be lost if you were to outsource that side of your communication?

Patrick: We do use third parties and have outsourced functionality for producing, distributing or translation of some reports. We will continue to look at outsourcing opportunities but from a client ownership standpoint there is a preference for us to maintain those relationships within our organization and look closely at that functionality where client interaction might take place. We place high value on maintaining control and interaction with our clients.

Noel: Do you feel that constant feedback from clients is essential across all aspects of your operations?

Patrick: We are always interested in what our clients are thinking. Normally that communication flows directly into the client relationship manager who distributes that feedback throughout the organization. For the most part our clients have a single point of contact that they would relay any or all information to.

Noel: How is client reporting likely to change in the next 1-5 years?

Patrick: Certainly one aspect that we've seen taking off is that more organizations are trying to expand their global footprint, so translation of material is high on the list of issues impacting organizations. Whether it's their branded materials, fact sheets or quarterly reviews, they will need to consider their strategy to support growth in translating those particular materials.

The timeliness of client reporting is also a key area, as you see a desire for more information earlier in the reporting cycle.

The increased use of portable devices and the web will have an impact on client reporting as well. How asset management firms reply to that particular demand will be critical to their progress in the future.

Noel: Thank-you Patrick for your time, it's most appreciated.

SECTION 5

DATA MANAGEMENT, STORAGE AND INFORMATION ON THE MOVE

5.1 WHITE PAPER

Why middle offices are central to data management and the client experience

5.2 ROUNDTABLE

Future data: how is the function of data and information management adding to operational performance and resource efficiency?

5.1 WHITE PAPER

Why middle offices are central to data management and the client experience

Bill Wilkinson
Senior Managing Director, Asset Management Services, TIAA-Cref

Asset managers have traditionally been able to win in the marketplace by generating strong investment returns for their clients. But as competition in the market increases, the ability to deliver consistent investment performance needs to be bundled with the ability to deliver great client service. As a result, asset managers' reputations are increasingly being affected by the activities of the middle office. This part of a financial services firm manages transactions, integrates the firm's data, handles the recordkeeping for their clients, and provides accurate client reporting – all while making sure that the firm's overall risks remain in balance and that they are adhering to the industry's regulatory guidelines.

So, why has the middle office become so important in today's market? In part, it's because of the growing complexity of the world in which asset managers operate. Twenty years ago, most domestic money-management firms were focused primarily on two asset classes – U.S. stocks and bonds. Over the last two decades, however, investment firms have added a much wider variety of asset classes – including foreign stocks and bonds, derivatives, etc. – as well as adding additional investment vehicles such as ETFs, UCITS and SICAVs to their product mix. Then, there are the less-liquid alternatives that are also part of the investment menu today – including private equity and hedge funds, real estate and real assets, like agriculture and timberland.

It falls to the middle office to be able to maintain and distribute accurate data on this expanding universe of investment holdings, which is an increasingly difficult task given the diversity of investment platforms and data sources. Most middle office teams now get multiple data feeds – along with pricing and specialized market information – from a variety of providers and sources and, with that, there is always the chance that data errors can be introduced into the systems that support the business. With the additional industry focus that is now being placed on complex securities and derivatives, there is even more of a heightened need to ensure the highest degrees of data integrity in the reporting that needs to be done for any asset manager or for its clients.

It might seem that these types of data problems would be less of a client-facing issue and more of an internal issue for firms but, in the global, rapid-fire, automated markets of today, an operational glitch or discrepancy in the data can also have an impact on the client – either in the form of trade errors or in incorrect reporting – which can then impact a firm's reputation. This underscores the importance of ensuring that firms look at data as a strategic resource and that they put in the appropriate infrastructure and controls to maximize the quality of the data that is being managed across their platforms.

The effective middle office

The asset management industry has seen other significant changes over the past decade or so, in terms of how their clients are looking to make investment choices – including the move towards open architecture. At TIAA-CREF, this change has had a significant impact on both our product offering and on our operations. In response to this move to open architecture, we have had to focus on building out the infrastructure and capabilities to be able to compete more effectively with other asset management firms – both in the marketplace and on our own proprietary platforms. As part of this journey, we are building out the infrastructure – from both a human and technical perspective – to support the distribution of investment-related data.

On the organizational side, we have created a service group that monitors data quality and responds to information requests from both within and outside the company. The group, which we call AMIDS (short for Asset Management Investment Data Services), maintains information on TIAA-CREF's funds, annuities and separate accounts – including holdings and cash positions, performance characteristics and distributions. Thanks in part to the work of the AMIDS team, we've become faster at getting information to Morningstar, faster at getting information to our consultant community, and faster at getting information to the internal and external sales organizations that support our investment business and our clients.

On the technical side, we're working on an application that will automate a lot of the data gathering that we do, which will enable us to publish data via any distribution mechanism, whether it's over the Web, in print, and eventually, even out to mobile devices. And because accuracy is so important, we're implementing a rules-based software engine to proactively check the quality of the data moving around our system, which will allow us to isolate any suspect data and fix it before it gets published. Our goal is to come up with the "golden copy" of our investment-related data – which will be a real benefit to our marketing team and support our compliance efforts. It will also help us to keep better controls over our data-related spending.

It all starts with the mission

After 2008, many middle offices started focusing on the risk-mitigation part of their jobs. This was an understandable reaction to the meltdown in world financial markets and the dramatic increase in regulatory pressure that followed as a result. But risk-mitigation shouldn't be the only focus of the middle office. They should also support the priorities and missions of their organizations and play a critical role in the value-delivery process for their clients.

In our case, the mission within our core retirement plan business is to serve the needs of clients who live and work in the non-profit sector. Like many people in the U.S., our clients — as a matter of necessity – are becoming much more interested in understanding where they are with respect to their investment goals, including their retirement savings, and how they can get on track and stay on track with their financial plans.

Our middle office, as a distributor of investment-related information, plays a big role in enabling this push towards greater financial literacy for our clients. To be sure, more frequent and more transparent reports alone don't constitute exceptional client service; they're what most clients – ours and others' – expect these days. But with bad data from the middle office, there's no way a firm like ours could fulfill that expectation. With good data, we're staying ahead of the game, even when the rules are constantly changing.

"more frequent and more transparent reports alone don't constitute exceptional client service . . . "

5.2 ROUNDTABLE

Future data: how is the function of data and information management adding to operational performance and resource efficiency?

Moderator

Noel Hillmann
Managing Director and Head of Publishing, Clear Path Analysis

Panellists

Brian M. Baczyk
Chief Data Officer, Conning

Craig Gatten
Managing Director, Global Head of Data Management and Reporting, Manulife Asset Management Operations

Todd Healy
Vice President, Director, Head of Investment Operations, BMO Asset Management Corporation

Noel Hillmann: What is your approach to data and information management?

Brian M. Baczyk: I am Conning's Chief Data Officer and lead a data governance committee which is a cross discipline group of data owners such as front, middle and back office as well as corporate finance and H.R representatives. It is a group that has the purview of all data usage and also includes people from our European and U.S operations. Our Asian operation will be included in the future.

We are starting to roll out a group of data stewards and have identified stewards for pricing, performance, compliance and reference data.

Craig Gatten: Within Manulife Asset Management our information management program also has a global scope. From an operational performance and resource efficiency perspective, the first thing we look at is automation to solve a problem. Secondly we look at global resourcing, and finally local resourcing. We currently operate on a global platform which has been created through deployment of best of breed tools. We have consolidated application systems over the course of the past 4-5 years.

This year we established an information management program to manage integration of data within the global platform with a focus on data to evolve the platform into a more efficient model. Considerations for our model include architecture, transparency to our end users, data lineage, and data quality throughout our best of breed toolset.

Some of the projects that we are focusing on within the program right now are external client reporting, Assets Under Management ("AUM") monitoring and reporting, and the master data management concepts which include fund and client masters, security master pricing, and some aspects of performance data which will be in play in early 2014.

Extendibility to other business purposes other than asset management within Manulife is also important to us from a resource efficiency perspective. Ultimately we are hoping to empower end users configuration instead of coding to give the power to the end user.

We are also looking at how data quality is ensured within our operations, which we've found is done in various different groups within asset management. We are looking to centralize this effort and perform data quality as close to the source as possible. We are also formalizing a data governance framework including the stewardship and decision process around defining, governing, and executing data related policies

Todd Healy: For us the process has been rapidly evolving as we have recently joined together two separate registered investment advisors and have embarked upon a very large project to implement a new portfolio accounting system here. Data governance has risen from a secondary role to a more front and centre one where we now have designated an individual to be in charge of the data governance and data oversight. One of our main focuses has been about the data consistency and looking at a single source where appropriate. In the past, like many firms, we had challenges with variable data outputs depending on the source of the information coming in along with the timeliness of that information. We've done a lot to evolve that from where we were with really maintaining everything in an Operational Data Store ("ODS") to transforming ourselves around an investment book of record and looking towards that single source.

Another key component for us has been the astronomic rise in data costs and looking to bring that into a more reasonable focus so that we are not overpaying for data and we are not paying for the same item multiple times.

Noel: Do you see benefits from a data perspective of an external partner handling data collection, storage, aggregation and reporting or are those benefits generally lost by relying on an external partner?

Craig: For our own portfolio's performance and analytics information I don't see a value or benefit. An external partner may not know the data as well as we do and may not know our needs around reporting and analyzing that data. There are instances where if there is information or data that is not core to our asset management line of business then it would be worthwhile to investigate other capabilities. An example would be in instances of classifications and credit ratings for private securities, where if a vendor could provide some value it would be useful and something to look at.

Other elements to consider are your internal capabilities; if you have tools and resources internally you need to assess the value of external services through a cost / benefit analysis. In cases where you do decide to partner externally, you want to focus on managing the data but you don't want to manage the external partner, which can happen when you do go external. There are also issues such as privacy risk and potential to create gaps in your business needs. You are also relying on the external partner for expertise, training, etc. and fit within your organization. As well as needing a tight Service Level Agreement ("SLA") to manage the partner efficiently, although there are still potential cost savings from a client perspective.

Todd: We were in a unique situation here when we brought together our two firms. One of the firms had a third party service for their data aggregation, to make a single source, but we have since discontinued that information service. The cost and benefit did not play out for us at this current time. Some of the lacking area were timeliness, coverage in some niche areas and dispute resolution. Resolution was difficult if we had got a fund manager who was challenging some of the pricing or other information that was coming through. This means adding a middle layer to that process rather than going right to the ultimate source of that pricing. We found that truly caused some delays and issues. When you look at a scalable operation the costs just did not reflect what we were receiving.

Noel: What kinds of value add could the external provider have been offering that would have made the costs worthwhile?

Todd: From a scalability perspective when you are dealing with a larger firm and you are talking about someone who is in excess of $30-50bn in AUM the coverage, securities and other related data points need to be truly scalable as an operation. If you are continuing to pay those set per security prices it does not benefit you. The other piece that we found frustrating was to have this middle man between the fund managers and the ultimate pricing service. This also caused some delays with researching the security history and new security set ups as there could be some latency issues as well.

If you are a smaller firm I do see the benefits but I don't think outsource providers have got their offerings together yet for the larger firms to offer a single source for our required data type.

"If you are a smaller firm I do see the benefits but I don't think outsource providers have got their offerings together yet for the larger firms . . . "

Noel: Brian what are your views on this?

Brian: From the security valuation perspective, our former vendor offered almost no ability to challenge pricing and very little transparency into how they were coming up with their prices. Part of the reason for choosing the vendors that we are moving to is that they are more than willing to explain how they got their pricing and add expertise that we can tap into. This is where the value add can be as they do have additional expertise that you can use.

The negatives of working with vendors are that they all have their own data models and these data models never match the data of the vendors that they are aggregating. In some cases getting at certain kinds of information is next to impossible as the vendor may have a very security centric view of the world. When you are trying to look at it from a legal entity perspective it doesn't really work. They can hide some of the richness of the underlying data. They can also create their own set of problems, resulting in a blame game. I have developed relationships with the downstream vendors and they've been able to directly tell me that "No, it isn't their fault". That starts a process of convincing the aggregator that they are at fault, which does not always work.

Noel: It sounds as though management, communication and transparency around vendors are very important. Do you feel that a lot

"If you lose visibility into the raw data then you lose value in that data."

of issues are being created because expectations are not being managed well between providers or is it just a fundamental difference between what you need as a client and what providers are really able to offer?

Craig: If you lose visibility into the raw data then you lose value in that data. Can a partner bring that to the table if you have the ability in a larger organization to bring in raw data and use it as you need it? That to me is something that as an aggregator you will lose, causing your organization to establish numerous relationships with the upstream provider which really isn't what you are paying the external provider to do. There is a management component that becomes front and centre and consumes your time to manage the data and provide analytics to meet your stakeholders' needs.

Noel: Regulators and clients are demanding higher degrees of transparency and operations as data availability on the move becomes a daily necessity. When thinking about security how do you manage the security consequences of highly sensitive data being in more places, at more times and by more people both internal and external to your organization?

Todd: We've made a decision not to have external clients access our data directly. Currently, the only way that our external clients, third parties and consultants can receive any data is by coming through our client services or a different distribution source out of our firm. On the internal side, you can still have many challenges when you have multiple users all over the place between areas like portfolio accounting, trading, reporting etc. To ensure that you are having that consistency of the data and that you are recognising something as the gold standard for a security price or different characteristics or attribute is critical. What we have done is to look at building an internal single source of that data that is now being utilized to funnel to all of these downstream applications. It allows us to have that centralized control and consistency of that data element.

Craig: Clients accessing data is primarily on the institutional side and we don't currently expose it. We aren't being asked to supply data daily, although what we are being asked for is more demanding than what we have seen in the past. More frequently we are being asked to provide monthly data in a customized format or layout different than we are used to sending it, as well as within a quicker delivery timeframe. We look to accommodate our institutional clients to provide them with a custom set of information in their standard format. We have found more recently that the ask of us today continues to be for monthly information and are received from the client through their relationship manager. We are looking at expanding our reporting channels to enable a subset of information to be provided to institutional clients, but that is in development now.

In terms of regulators we certainly see an increase in reporting requirements from our compliance group through internal requests for information. Our compliance group has built a robust compliance program around our order management system and data internally, in order to manage compliance reporting requirements on a pre-trade basis. A lot of that information with a daily necessity is embedded within the OMS.

We are in a global environment so there are a number of different regulators and standards that we are dealing with. From a data perspective we are trying to find the common denominator across the information requirements and meet that need, but it does vary significantly between countries.

Brian: As all of our clients are in the insurance or pensions business, we have a lot of regulators to deal with globally but in general they don't have access to any of our systems directly as they get whatever their filings need to be. It's handled by different groups depending on whether it is firm level compliance or compliance specifically for a client. Our clients do have access to information daily and that is being brought into a governed environment where we are looking at entitlements and confirming we have the appropriate licenses and disclosures in place.

Internal distribution is a lot harder as people can access information from their phones or tablets. As part of the governance process we have created a policy where we classify the sensitivity of different kinds of information and working with our IT group. Their data security personnel have come up with suggested best practices. For example, highly confidential information should not be opened on a laptop in a coffee shop. We are approaching it from a policy perspective.

Noel: Have you moved from working on the basis that you're preventing intruders to assuming that intruders already have access and stopping data leaving unauthorised or without being recorded?

Brian: Conning expends a significant amount of resource to secure data entrusted to us. The most dangerous attacks are those launched via social engineering or other, soft, measures.

Craig: Manulife as an organization puts a significant amount of effort into securing its data, but I couldn't give you specifics as to where exactly we are in this except to say that there is a considerable amount of effort on the technical side.

Todd: BMO is a very large bank here in the U.S and Canada which is receiving literally thousands of attacks everyday. There is a dedicated group within our technology department who are charged with nothing but securing networks and access as well as monitoring where potential hits are coming from.

Noel: The marketplace for reference data is at an all time high but is there such a thing as too much data or are you looking wider and at more niche useful data sets?

Craig: There is no such thing as too much data on offer. Whether we choose to engage, and we do talk to a lot of potential providers, is a different matter. What we look for is a purpose or specific use of particular data to our firm. Of course, if that meets a purpose then it should also be less expensive than developing internally, including the cost of development and bringing all new elements internally i.e. processes, staff and licenses.

We look at anything and everything in regards to data. The external providers are getting to be more specific on what they are offering particularly around LEI as there are a number of very specific uses for this information. Both acquisition and management of information by a market provider are different areas where the data on offer would be of interest to us.

Todd: At this point because general information is readily available from multiple sources the key is to focus on a single source of a single piece of data and to reduce the potential for conflicting data to come in. As far as the expansion of new data, for us those are typically around new product launches. There we tend to look to new sources which makes it more of a niche type of information. New data types tend to be extremely expensive so cost control is always top of the mind as well.

Brian: It has to be focused on what is needed for the business and cost is always a factor. Data is expensive and you need to focus on the business so new product launches and regulatory requirements etc. tend to drive what it is you are looking for.

Noel: How will the world of data and fund management change in the next twelve to twenty four months?

Todd: There is going to be an expansion of the niche type players and the speed with which we are receiving data is also going to increase. Our demands as a business for receiving better and faster information are going to drive these changes. Some select vendors are going to rise to that challenge. Cost pressures are also going to continue to mount on both parties. I don't think this constant elevation of cost that the vendors have pushed onto their clients is going to be allowed to continue. There is going to be a lot more push back from the business side on cost containment.

Craig: There will be a greater focus on cost containment and optimization, also a focus on the aggregation of multiple feeds and sources within a firm at a more efficient rate. In addition, new requirements driven by regulation will continue to expand and evolve and will be critical to a fund manager's success.

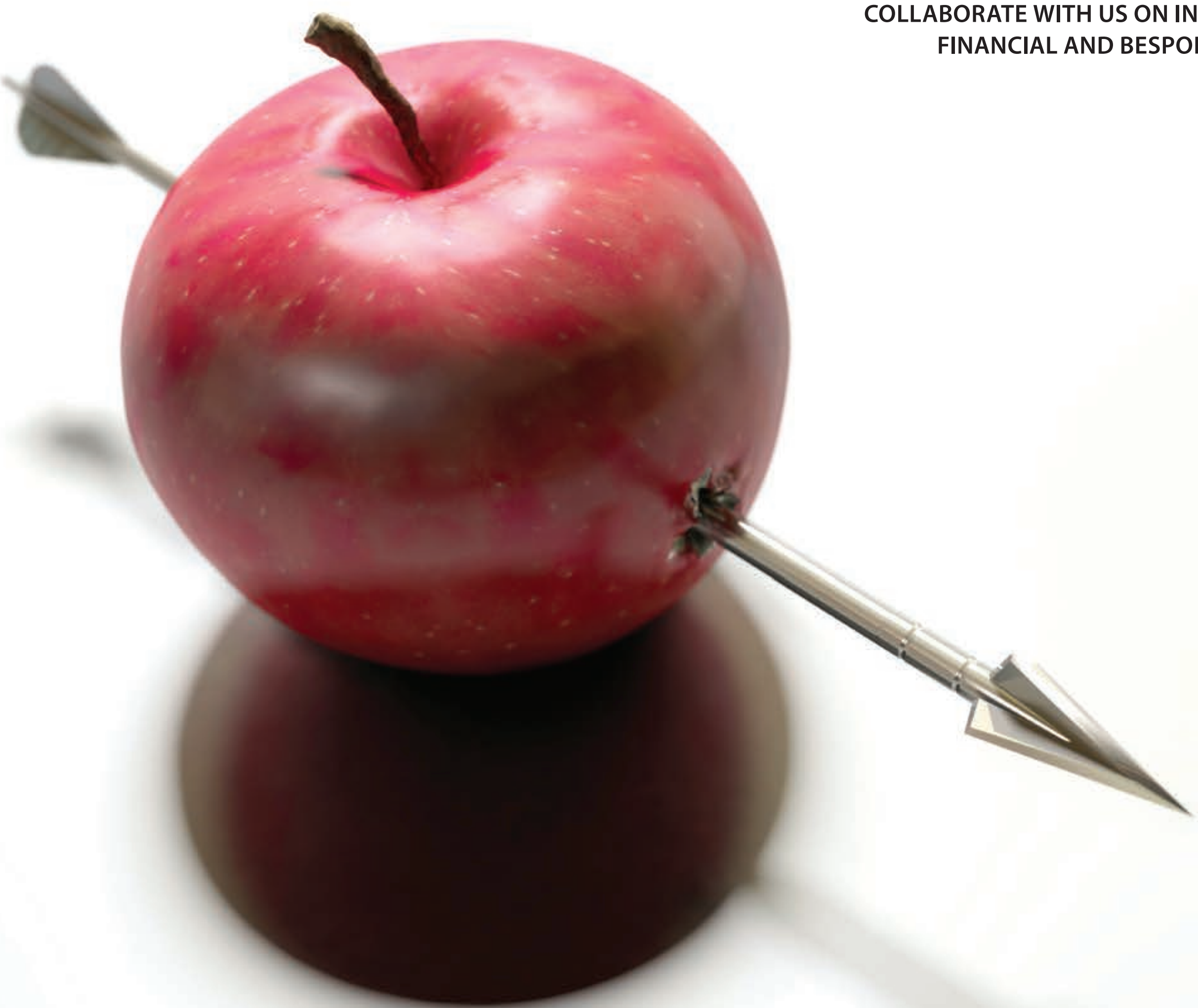
Brian: It's going to be more regulatory driven change both in the need for transparency and content. Cost focus will be critical. The whole notion of vendors being able to slap 5% increases as they like, or in the case of one vendor 20%, isn't sustainable. As a company we will continue to have a more global focus as we are looking to bring in information on a much broader range of securities and markets than we have ever had before.

Noel: Thank-you gentleman for your time and for sharing your views.

"Our demands as a business for receiving better and faster information are going to drive these changes."

TARGET YOUR KEY AUDIENCE

COLLABORATE WITH US ON INFORMATIVE FINANCIAL AND BESPOKE REPORTS



"Clear Path Analysis helped us reach our core market . . . gain greater recognition and understand who is seeking to invest in our bespoke area of expertise . . . We would highly recommend them to others."

MARIO A CHEJAB, Director, Pachamama Forest

FOR MORE INFORMATION VISIT: www.clearpathanalysis.com
T: +44 (0) 207 822 1801 E: marketing@clearpathanalysis.com

CLEAR PATH ANALYSIS

© Clear Path Analysis Ltd, registered in England and Wales No. 07115727. Registered office 69 Blyth Road, London, England E17 8HP. Trading office Fleet House, 8-12 New Bridge Street, London, EC4V 6AL.

INSURANCE ASSET MANAGEMENT, EUROPE 2014 REPORT

The online report bringing together senior Investment, Operation and Senior Insurance Managers to examine the challenges facing insurers as they seek to invest in a low yield environment to meet on-going liabilities.

DOWNLOAD FOR FREE

REGISTER YOUR INTEREST NOW TO BE EMAILED THE REPORT AS SOON AS IT IS RELEASED

Clear Path Analysis specialize in the publishing of high quality, free online reports in the financial services and investment sectors, including:

- BANKING
- FINANCE TECHNOLOGY
- FUND MANAGEMENT OPERATIONS
- INSURANCE
- INVESTMENT STRATEGY
- PENSIONS ADMINISTRATION & OPERATIONS
- PRIVATE & RETAIL INVESTMENT

DOWNLOAD THIS REPORT & OTHER FREE FINANCIAL REPORTS FROM WWW.CLEARPATHANALYSIS.COM

CLEAR PATH ANALYSIS
REPORTS
www.clearpathanalysis.com

FOR MORE INFORMATION VISIT: www.clearpathanalysis.com | T: +44 (0) 207 822 8559 | E: marketing@clearpathanalysis.com

Clear Path
ANALYSIS

TO READ MORE FREE REPORTS VISIT:

www.clearpathanalysis.com

The opinions expressed are those of the individual speakers and do not reflect the views of the sponsor or publisher of this report.

This document is for marketing and/or informational purposes only, it does not take into account any investor's particular investment objectives, strategies or tax and legal status, nor does it purport to be comprehensive or intended to replace the exercise of an investor's own careful independent review regarding any corresponding investment decision. This document and the information herein does not constitute investment, legal, or tax advice and is not a solicitation to buy or sell securities or intended to constitute any binding contractual arrangement or commitment to provide securities services. The information provided herein has been obtained from sources believed to be reliable at the time of publication, nonetheless, we cannot guarantee nor do we make any representation or warranty as to its accuracy and you should not place any reliance on said information.

© Clear Path Analysis Ltd, registered in England and Wales No. 07115727. Registered office 69 Blyth Road, London, England E17 8HP. Trading office Fleet House, 8-12 New Bridge Street, London, EC4V 6AL.