FUND TECHNOLOGY & DATA, NORTH AMERICA 2015

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An examination of the key issues of outsourcing, centralization of data and the impact of regulatory pressures on fund management operations

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SECTION 1

AN UPDATE ON REGULATION

1.1 INTERVIEW

Examining how the pressure to institutionalize regulatory compliance procedures is driving consolidation and improvement of supporting technology

1.1 INTERVIEW

Examining how the pressure to institutionalize regulatory compliance procedures is driving consolidation and improvement of supporting technology

Interviewer

Noel Hillmann
Managing Director, Clear Path Analysis

Interviewee

Brian Ness
Chief Information Officer Corporate Services, Principal Global Investors

Noel Hillmann: Thank-you Brian for taking time to speak with me.

To begin, is consolidation of technology consistent with an 'improvement plan' or can more systems also equal more possibilities?

Brian Ness: Technology and consolidation can both be positive and negative. Ultimately the business benefit is a factor in which one it is, so as businesses grow and evolve and technologies emerge we should be looking to how we can leverage technology to move us forward.

At Principal we view architecture road maps and system inventory as critical components in understanding the mapping or business capability technologies to solutions. The architecture rigour helps us objectively understand the gaps in our solution set as well as areas of duplication. We then work with business partners to understand opportunities, to evaluate new technologies and sunset ageing or duplicate technology.

Noel: Do you find that due to the trend towards understanding more about your operations means that you are taking on more systems or is there a continual development of existing technology and can it support that?

Brian: With the consumerisation of technology as well as people in the business who are very technology fluent, there is an increase knowledge of technological solutions that are coming in.

Noel: Do you feel there are still gaps in the need for technology or that now, whether developed in house or by an external provider, that effectively every operation has a solution if it is a technology one?

Brian: There are gaps and there will continue to be gaps where technology needs to evolve in order to meet the changing business needs.

Areas like artificial intelligence or cognitive computing are recent examples where there is a lot of technology investment being made in the technology sector that is just beginning to emerge in businesses.

Noel: It's unlikely regulatory changes will be stopping anytime soon, both in North America and oversees. Does the challenge of responding, via system changes, to new and anticipated regulation risk mean that new silo's are inadvertently created within your systems to deal with individual regulations over time?

Brian: There are certainly times when the regulatory changes are resulting in new requirements for how we administer systems. I view these as new requirements versus new silos, it is increasingly important for I.T and compliance to partner together to ensure that all of the systems are understood from a regulatory perspective.

At times these requirements are resulting in changes in how and where data is stored. Most recently the regulatory changes have been around cyber security and protecting digital assets, so the regulations in this space really compliments those companies who have been actively pursuing their clients' interests anyway. It is just new requirements or techniques.

"...as businesses grow and evolve and technologies emerge we should be looking to how we can leverage technology to move us forward"

Noel: Do you feel that the regulators across the globe are taking into consideration the fact that it is a globalised world and therefore regulation needs to be something that fund managers can easily adapt and adhere to regardless of where new regulatory requirements appear?

Brian: There are certainly areas where regulators are working to be more consistent. I would say that they aren't yet all consistent, so that is a complicating factor when there is inconsistency in the regulation. At times there is actually conflicting regulations. In those situations we try to work hard with the regulators to understand their intent and then come up with a reasonable compromise solution that can be successful.

Noel: As such, do you still need to have individual systems in separate countries or can everything be managed from a head office level?

Brian: As a global organization there are times when the regulatory environment requires a local system or local database to meet the regulatory expectations and requirements.

Noel: Looking to the future of the marketplace, fund managers, including Principal, are clearly responding to institutional investor interest for investing in a wider set of assets and investment strategies. Can the evolution of investment product offerings be inhibited by consolidation to fewer systems?

Brian: I.T can absolutely unintentionally inhibit the adoption of new product or getting a product to market sooner if we are not careful about working closely with the business to understand product road maps or launch cycles, for example.

What we try to do is be very actively engaged with our product development team so that we understand where the business is going and what solutions will help them to get this accomplished.

There are times, particularly when I.T works to consolidate systems, that conflicts can arise with a business if we aren't understanding the business intent.

Noel: Are there certain investment strategies that are off limits from a technological and operational standpoint, where it is a step too far either because of the cost of upscaling to manage those types of assets/investment strategies or for other factors?

Brian: Overall technology can be very expensive and can be both an enabler and a hindrance to the business. So when we are looking to launch new products or asset classes and

"...certainly a key part of the valuation is what are the system expectations and requirements that would go into meeting that business need"

certainly a key part of the valuation is what are the system expectations and requirements that would go into meeting that business need. This all factors into the business case when we are building that out.

With the advent of more widely adopted hosted applications, outsourcing possibilities have increased the business flexibility that we have in adopting technology quickly and at times more inexpensively to meet a specific business need.

Noel: Thank you for sharing your views on this topic.

SECTION 2

NEW PRODUCT DEVELOPMENT AND GLOBALIZATION

2.1 ROUNDTABLE

‘Necessity is the mother of invention’ – exploring the diversified demand on technology as a result of new product areas and geographies

2.2 WHITE PAPER

Think globally, configure locally: aligning your technology to take advantage of global opportunities

2.3 WHITE PAPER

Connections, collaboration and information - end to end oversight in an evolving world

2.1 ROUNDTABLE

'Necessity is the mother of invention' – exploring the diversified demand on technology as a result of new product areas and geographies

Moderator

Margie Lindsay
Editor, Alpha Journal

Panellists

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

Dennis Gonzalez
Co-Founder, Alta Strategic

Robert Roley
Senior Vice President, Product and Client Experience, Advent Software

Margie Lindsay: How does technology help in the product creation process?

Robert Roley: When we talk about the investment creation process it is generally because a lot of our clients are the ones creating those investment products. Ultimately, they look to us to help them solve the issues that arise when creating a new product and so, although technology itself doesn't dictate the process, it certainly is a consideration. If an investment manager goes to create a new product, they want to know what effect it will have on their investment process, and middle and back office processes, and if the technology and systems that they have inhouse are capable and appropriate for that.

We have clients who have created a new product and then struggle because, in many cases, they have created processes or adopted technology that is limited to a given market, niche or region from a geography perspective. We see others who have not only adopted the solutions but the way that they have implemented them has been in anticipation of potential growth, changes or even moving in a direction that they could not have anticipated. These firms tend to be successful, however, there is certainly change that needs to be managed. When developing our own technology, we aim for easy-to-use, off-the-shelf systems that clients can use for new product areas. We build for a great degree of configurability, as a client's requirements are often going to change, particularly, for those who operate in a global business. So we have built a lot of our systems to accommodate aspects like flexible fund type or instrument set ups that can keep up with new product design that may be created in the future.

Dennis Gonzalez: The technology behind ETFs ("Exchange Traded Products") continue to evolve and bring down costs for investors. Investors who are no longer just retail, but growing quickly within institutional space as the greater efficiencies translate even better for higher volumes.

What is new and exciting now are the technologies that have been developed for distributed public ledgers, which underpin crypto currency platforms like BitCoin or Ripple. While the currency platforms make the headlines, the protocols used to track the transactions for these currencies are where the real value and opportunities lie for banks. We haven't even begun to scratch the surface in terms of how we leverage these new technologies and protocols; how we combine them to build contract systems directly into transactions, to solve existing processes faster/cheaper. From an operational, back office perspective these new technologies and the startups they launch may be highly disruptive.

When you come up with a new front office product for clients, let's say a structured product, you then have to figure out how you are going to pay for it or how you are going to bring the margins down in the back office, with all the additional work that it creates in the settlement process. We have seen a lot of this in terms of reporting technology where it has become a lot easier to report; but these new distributed ledger protocols have the potential to be absolute game changers. Imagine scenarios where settlement costs drops to zero! What could ingenuity unleash?

Todd Healy: Technology helps to ensure that we have the right mindset from a product capability standpoint. We involve members of our various operation teams in the Product Committee, so if we intend to launch a new product type we ensure that we are either currently equipped, or could become equipped with the necessary data and tools, in order to support a new product. The intention is to prevent teams from being surprised when someone has a new idea and you need to be sure how you go about managing all of this data. For example, do we have the right storage and interfaces and do our process and subscriptions support what we are trying to do? Having the right involvement early on truly helps that creation process as well as the ongoing product support.

Another key element is looking at how products have changed. This evolution of product type is going to continue to accelerate. There are current products out there today that if you look back 5 years ago, you couldn't have imagined there would be an opportunity for say liquid alternatives in some of the different flavours that we are seeing now, especially with so much flow of capital. There is a vast amount of data necessary and we need to ensure that we are on the front end of accessibility in terms of our systems, process, subscriptions and capacity in order to be able to launch those new products.

Margie: As products become more complex, do you have any concerns that you may become too reliant on technology? The Securities and Exchange Commission ("SEC") and UK Financial Conduct Authority ("FCA") have both been worried about what happens if something goes wrong and consider this an area of supervision regarding counterparty risk.

Robert: As someone who is responsible for selling and supporting technology, it is a means to an end. Technology is only as good as the way it is implemented and used. It only knows the rules and constraints that you have told it – either that a technology vendor like Advent has put into the products or how a client has configured it. For these reasons, technology never has the same 'common sense' type filter that our users have.

We want to build products that are very easy for our clients to understand, adopt, and use so that they aren't over-reliant on the solution and understand what it can do and if there are any limitations. This means that clients understand the areas around the technology solution where they still need humans to intervene. We count

"Technology is only as good as the way it is implemented and used. It only knows the rules and constraints that you have told it"

amongst our clients some of the most technically sophisticated firms in the world and their business lends itself to being very automated. So, for them, there isn't much concern about being overreliant on technology, as they are completely dependent on it already, and they are sophisticated in terms of developing and using that technology. However, other markets that we operate in are not very technologically-friendly in that the types of business or trading that they do don't lend themselves to being solved by technology. As long as your technology solution is appropriate, and you can fill in the gaps of the elements that it can't do, you will be in a good spot.

Dennis: 20 years ago I structured Collateralized Bond Obligations ("CBOs") and Collateralized Debt Obligations ("CDOs") which were somewhat novel back then. I started to use Excel to visualize the data and make it easier to understand the tranches described by the data tables through 3D charts. This not only made it easier to develop more complex products but these visualizations became a marketing tool for these products. By using primitive visualization technology we made it easier to increase the complexity of the instruments. Should this reliance on technology have been a concern? Definitely, but the point is that we have to manage for the reliance, because the advances will only continue in search of risk/reward. We are always going to be pushing the envelope to look for better products and we just have to harness the same technology that we use on the one side for creating new products and added governance to manage and mitigate the new risks.

Todd: We have certainly grown more reliant on technology over the years but I don't feel that is a bad thing. The real danger is in not keeping up with technology as we cannot stop the technology train that we are all on. A few years ago, we could not have anticipated the SEC issued guidance on cyber security that came out earlier this year. Looking at our requirements for disaster recovery and business continuity planning, there is a huge focus on technology as it has become an integral part of how every firm manages money and investments. Keeping up with it is what we need to do. Otherwise we will be swallowed by it, and that is the greater danger. It is such an engrained part of how we do things I could not envision operating without it.

Looking into the future we will continue to add more data architecture and data stewardtype roles within the investment management area. Looking back 5 years ago nobody had heard of a Chief Data Officer or stewards and now many firms have these in place and more are moving in that direction. New technology and data will continue to allow us to look at new products and hopefully to manage better and look to reduce risk by introducing the right alternatives and putting together the right asset allocation for our clients.

Margie: Is there a move towards a single viewpoint technology? Can systems support this or is it something that fund managers tend to expect people to do for them without them having to pay for it?

Robert: This is a system or technology that allows us to service multiple types, whether it is users or geographies, from within a given system as opposed to having disparate systems to solve for multiple viewpoints. It is a neverending battle but that is what keeps our work exciting. We see a number of big macro drivers that influence what we do and what we build. One is the diversification in the types of products that our clients are offering. Another is the globalisation of wealth which results in different users and clients in different geographies. Yet another driver is the investors who demand transparency and want it in all different ways that refers back to Todd’s point about data architecture and steward roles not being thought about previously, but now you have having to serve different types of investors all over the world who want different things.

The final point is around regulatory change where, if you think of the regulators as another consumer of the information that you have, you will not want to build a separate system to meet Alternative Investment Fund Managers Directive (“AIFMD”) requirements as you had to for Form PF, as the information is quite similar.

To tackle these issues, we aim for off-the-shelf products that can be configured as things change. From a geographical perspective there are two more specific things; one is that you have to think globally from the start, so, wherever your first clients are based, you still need to factor in global requirements so that you don’t paint yourself into a corner further down the road. We’ve built our products to be currency agnostic and regime agnostic so that you can support multiple views on the same data. We have had a lot of success in many geographies by displacing local providers, with Brazil being the most notable recent one. By local providers I mean someone who builds systems specifically for Brazil, because once their client starts investing in products outside the country, their systems start to break down.

Even though we are trying to build things that can be used all around the world, you always need to be sensitive to the uniqueness of the various lines of business, the users, and regions that you operate in. If you are trying to build a global product just by shooting for the lowest common denominator it is a good recipe for being mediocre everywhere. Only by being aware of what a given market or given set of clients wants or needs can we be great at what they expect of us. We would rather excel at a finite set of markets rather than try to be everything to everyone, and the way that we have done that is by partnering with experts in a market or locality. We can’t be specialists on everything from Brazilian fixed income to German tax laws, although our products do support these things, so we have developed deep relationships with our clients and other third parties to operate within those markets that we leverage for expertise. We use technology to leverage that expertise and through this we have been able to provide a high level of service to our clients.

Dennis: It is the reality that tradeoffs do have to be made and whether it is build, buy or create partner alliances. It’s no longer feasible to run multi country business and expect to build your outside facing technology. Ironically, its recent onslaught of regulatory requirements that have necessitated a more aggressive Return on Investment from technology investment. So government has effectively been helping to push the development of systems that are more global in nature. The role of IT leaders is to be very smart about new technology because before the implementation is complete, they will have to leverage it to meet the next requirement/ deadline. It is about trying to find enough time and resources so that you can build in some expandability. Over time, I believe our businesses are going to reap the dividends because any new requirements demands that come up, whether they be regulatory or a driven by the client, will be that much easier to meet than just a few years ago.

The challenges for a global asset manager is how you structure between the people, process and systems so that you are able to be quick to market and maintain those items that make those particular groups unique. You must also look to see where you can leverage software technology to neutralise some of the remedial tasks in the background so that you can focus those regional deliverables where there is most value.

We have all seen the buzz around the Investment Book of Record (“IBOR”). We need to look at how we can bring together data so that we can have one view of the truth where our positions and prices are, as well as having that consistency of data in the various applications that people are using. You need to look at the data-type roles in order to achieve that, as many institutions are working towards this “followthesun” trading day so that when one market closes another is overlapping. You need to know how you are processing all of that information. It is a challenge if you are going to be centralized rather than operate within a silo but if you don’t do it, you then have inconsistencies. It is a challenge that we all face in our work. Searching for the best way to try and get your arms around all of that information and bring everything back, especially once you are operating and trading in more than one market and have different product types depending upon the distribution requirements for that area.

Margie: Looking at technology and all the advancements and risks associated with advancement, what worries you most about the future?

Todd: Being able to support all of those different systems and managing data. Looking at what is the right balance, as technology is continuing to evolve at a rapid pace and we can now talk about whether we want to have things internally or externally hosted etc. There are so many different options that we did not have an opportunity to explore in the past; the exploded growth of cloudbased technologies where maybe we join everything together outside of our network and the vendors’ networks and try and make it fluid could create new opportunities. I also think about the speed of regulatory change in our industry and need to know that we are able to answer questions and able to respond quickly to these needs as well as staying on top of all of that data.

Dennis: It is never as bad for me as it is for cyber security leaders dealing with more and more with a losing war against hackers. I feel security is the most troubling concern for all firms. Trying to balance all of the other parts of the equation is also a difficult task but security is the one unknown. From what I read, what colleagues and peers tell me and what I have seen from direct experience with law enforcement, we are not yet very good at keeping determined and creative hackers at bay.

Robert: It is striking up a balance as we have our products that exist today, and we spend a lot of time and money on making them better, but we always want to continue to increment on what we do because that is what our clients are asking – to build the new feature or product type. However, we have to balance this with trying to keep up with technology changes and full paradigm shifts in technology. We will continue delivering what our clients expect whilst investing in new products for the near term and ensuring that we don’t get left behind and are going to come out with the next generation type of product when the market is ready for it.

Margie: Thank you all for sharing your thoughts on this topic.

"...what is the right balance, as technology is continuing to evolve at a rapid pace..."

Think globally, configure locally: aligning your technology to take advantage of global opportunities

Robert Roley
Senior Vice President, Product and Client Experience, Advent Software

There is no doubt global wealth is on the rise. The 2015 World Wealth Report from Capgemini and RBC Wealth Management claims that the previous year produced over 900,000 newly minted millionaires worldwide. Meanwhile, analysts at PwC predicted that global AUM will exceed $100 trillion by 2020, with more than half of that outside North America. It stands to reason that all those assets are going to require smart money managers to oversee them, and those managers in turn will need sophisticated technology to do their jobs.

A corollary to this explosive growth is the breaking down of borders between providers and users of capital. Among US investors, some international exposure is widely considered de rigueur for true diversification, while in Europe, where domestic markets are smaller, cross- border investing has long been the norm. Emerging markets in Asia-Pacific, Latin America, and the Middle East/North Africa region continue to attract foreign capital, often in the form of pan- regional funds, even as their local investor bases grow. Among hedge funds, it is not uncommon to have multiple asset classes denominated in multiple currencies within a single strategy.

Astute investors are aware – or should be – that the opportunities in global investing are often accompanied by the risk of steep market volatility as well as political and economic risks. What they may not appreciate, though, is the operational complexity global investing creates for asset managers. Firms that want to navigate international waters have to understand a myriad of accounting standards, tax codes, trading practices, and market infrastructures in widely varying stages of development. And that's not to mention the wave of regulations and reporting requirements that washed over the world in the wake of the previous decade's market meltdown. Just to cite a couple of common examples, US-based hedge funds that market to European investors are bound to comply with the EU's Alternative Investment Fund Managers Directive (AIFMD). Conversely, non-US financial institutions that cater to US investors must report on their American clients' holdings under the Foreign Account Tax Compliance Act (FATCA). It's a complex web that has been woven around us.

So what should fund managers be looking for in the way of support for their global ambitions? Specifically, what should technology providers be doing to make it relatively seamless to manage global portfolios without a lot of complicated or manual processes or a patchwork of single-purpose systems?

I can share with you the perspective of a global solutions provider. Advent has been doing business internationally for over two decades. Together with our parent company, SS&C, we serve clients in more than 80 countries, not just in money centers such as London and Hong Kong, but in places like Sri Lanka and Dubai. Obviously it would not make business sense to build custom solutions for all those different localities. Nor would it make sense for our clients, who want – in fact, demand – the flexibility to enter new markets or bring new products into their investment mix.

> "investment management technology solutions should be developed with a global perspective right from the start"

Fundamentally, we believe that investment management technology solutions should be developed with a global perspective right from the start. That means building on open architectures that allow for adaptation to local market requirements and for true multi-currency processing. Some portfolio management systems, for example, employ a "system currency," into which all transactions must be converted before they can be settled and properly accounted for. We believe that a global platform should allow managers to trade, settle, and account in virtually any currency in which securities are denominated.

Another key development principle for us is flexibility to adapt to changing markets. Users of our Geneva® solution, for instance, tell us it's easy to set up new and often complex instruments, whether they are exchange-traded or customized bilateral contracts. We designed the product with that need in mind.

Flexibility in deployment options is also important. Many firms have offices around the world and are operating around the clock. They want a single platform that's accessible from any of their regional offices at any time. Advent makes this possible with hosted solutions, either through our own Advent OnDemand offering or through relationships with third-party hosting providers located around the world. Hosting has the added benefits of addressing business continuity and minimizing ongoing system maintenance headaches for the client.

Finally, while we can design technology with the optimal flexibility to adapt to different markets, we never forget that it often takes people on the ground to close the gap. We know we cannot always be experts in Brazilian bonds, Norwegian tax laws, or Canadian reporting requirements, so we've developed deep relationships with regional experts in the markets we serve to help configure solutions to our clients' needs.

With hundreds of installations spanning six continents, the most important lessons we have learned come from our clients. Listening to and collaborating with clients has always been a hallmark of Advent's product development process. In today's world, in which capital flows fairly freely across most borders, investment technology providers simply have to be thinking globally in everything they do – because their clients certainly are.

"With hundreds of installations spanning six continents, the most important lessons we have learned come from our clients."

Connections, collaboration, and information – end to end oversight in an evolving world

Dan Houlihan
Executive Vice President and Americas Head of Global Fund Services, Northern Trust

In today's world, asset managers are challenged to formulate oversight programs that span multiple product types and regulatory regimes. With heightened regulatory considerations around the globe, the need for strong communication and the effective exchange of information has never been more critical. While similar in spirit, in practice the compliance requirements to fulfill rules in different jurisdictions rarely align identically. Data needs and available technologies are constantly changing, challenging global asset managers to keep up with the pace. In order to meet evolving requirements, managers and their service providers must connect and collaborate, forming stronger relationships to help facilitate sound programs.

Consider the perspective of a U.S. mutual fund's Chief Compliance Officer (CCO). The CCO's obligation is to uphold policies and procedures that are designed to prevent violations of laws and regulations. Documented protocols, clear escalation procedures, sound controls and segregation of duties to ensure checks and balances, as well as a healthy risk assessment process are all key components to consider. Behind each compliance report, of course, are data and information. The CCO must rely on information from the adviser and other service providers to the Funds in order to make assessments to effectively execute an oversight program. Service providers must be in a position to provide this data and reporting to the CCO in a timely and accurate manner.

Although CCO oversight has been part of the compliance culture in the U.S. for more than 10 years now, the U.S. mutual fund world continues to evolve. With recent rules issued around money market reform, and proposed rules on the table regarding Adviser and Fund reporting which would require significant changes, the needs around data are expanding quickly, and the timelines for delivery of that data are becoming tighter. If we consider the regulatory drives to modernize reporting, requesting additional information for expanded risk assessments, we see the continued push for faster, deeper dives into data.

To further illustrate how data needs are changing, the SEC noted in the "Looking Forward" section of its 2014 report that, "significant enhancements to the risk management practices of investment funds and advisers" was a 2015 priority. In late May 2015, the SEC demonstrated this focus with proposed rule changes, including the proposed new form NPORT which replaces the quarterly NQ filings with monthly filings. Like the recently implemented Form NMFP, which specifically focuses on money market funds, proposed Form NPORT requires information about a fund's holdings, including risk metrics, on a monthly basis. The data necessary to inform this reporting must be gleaned from several sources to provide a comprehensive and detailed filing.

The industry is swift to review and assess the potential impacts of new proposals, including the impacts on underlying systems and processes that would be required to support the rules. Although implementation work often does not begin in earnest until rules are final, in order to be ready, significant planning and thought must be done during the early stages, with managers and providers coming together not only to assess impact, but to provide feedback to the regulators. SEC rule changes are just one example of the need for asset managers and service providers to maintain strong lines of communication, and to ensure proactive collaboration in order to respond to regulatory evolution. We must come together to assess, analyze, respond to, and formulate solutions.

Global asset managers face additional challenges, as they must navigate the rules of more than one regulatory regime. For those that offer funds in different wrappers and in different domiciles, there is a need to formulate oversight programs and reporting processes that can leverage similarities, but adjust for local nuances. It is important for global managers to have experts within the respective jurisdictions – whether they are staff members, attorneys, compliance consultants, or other service providers – who are knowledgeable about the unique requirements of each regulatory environment.

Take Alternative Investment Fund Managers Directive ("AIFMD"), for example, and its interpretation of "alternative" funds. AIFMD seeks to regulate entities involved in the management of Alternative Investment Funds ("AIF"). The directive applies to EU investment managers who manage AIF's (both EU and nonEU domiciled), nonEU investment managers who manage EU AIFs, and nonEU investment managers which market any AIF (both EU and nonEU domiciled) in the European Union. AIFMD may, at a glance, not appear to have any impact to a U.S. registered mutual fund. After all, 40 Act funds are not "alternative investments." They are regulated products with a robust oversight and compliance structure. When we look closer, however, there are potential implications for European fund managers with 40 Act products.

AIFMD's definition of an AIF is broad, covering "all collective investment undertakings, including investment compartments thereof, which raise capital from a number of investors, with a view to investing it in accordance with a defined investment policy for the benefit of those investors and which are not UCITS." Since the directive defines any fund that is not authorized as a UCITs fund as "alternative" – including 40 Act funds – a 40 Act fund managed by an EU based investment manager would be considered an AIF, and the EU investment manager would be subject to the applicable rules. In situations such as these, the fund has multiple reporting obligations beyond those that are tied directly to its domicile and structure– so the same data must be accessed, organized, and reported in multiple ways. From an operational and technology perspective, the challenges of navigating multiple jurisdictions can be simplified for managers who work with a provider with a global presence for core services such as custody, middle office, and fund accounting/administration. Savvy providers can help to slice and dice similar data in very different ways in order to fulfill reporting requirements in multiple jurisdictions.

The U.S. funds industry experienced similar rule changes in the private funds space with the implementation of Form PF, which requires private fund advisers to report regulatory assets under management to the Financial Stability Oversight Council. Success in responding to this new regulatory requirement required collaboration, communication, and the exchange and synthesis of data from multiple sources. Securities details, accounting information, and investor data all inform filings. Strong data support programs bring together the information from the various source systems in a usable, flexible way.

We can draw comparisons between AIFMD and Form PF filings. Although both are focused on private funds, there are nuances in the reporting that must be met. The requirements are the same in spirit, but not in the details. For example, the means of classifying investors is similar – but is not identical. This means that for funds that can be considered in scope for reporting under both regimes, such as a U.S. Partnership managed by a UK based manager, the same data elements must be tracked, classified and reported in multiple ways. Not only must the data be accessible, but the labelling and classification must be flexible in order to meet the reporting requirements of different regulatory regimes.

In this environment of multiple nuanced rules and reporting requirements, how can a global asset manager efficiently meet the challenge? Scott Jones, a Director with Carne Financial Services who serves as the Risk Officer to the Adviser's Investment Trust, recommends applying a consistent discipline to like products, with adjustments for local nuances. Service providers can assist by identifying synergies in seemingly disparate reporting requirements, and leveraging flexible methods of extracting and presenting data in order to quickly meet needs. In addition to the effective provision of data, in a recent National Investment Company Services Association (NICSA) Strategic Summit panel discussion, Scott noted that strong communications among the teams remain critical, calling poor communication the greatest risk of all.

In addition to the demands of the regulatory environment, we have seen increasing demands by the institutional investor community for data transparency. With data being reviewed and processed by consultants, fiduciaries, and other entities that play a role in the oversight and servicing of institutional investors, the efficient exchange of data serves to support several players throughout the asset management and asset servicing industry. Decision makers who carry fiduciary responsibility for their clients continue to seek more data transparency in order to ensure that they can demonstrate and support their own reporting and due diligence requirements.

Ultimately, regulatory oversight around the globe and across the industry has a common goal – to protect the interests of the investing public. This is the core principal guiding the efforts of asset managers and service providers alike, and in efforts to build effective programs and operations, it is one that must remain firmly embedded in our culture. During the NICSA discussion, Harding Loevner's Lori Renzulli, CCO of an adviser to a global suite of registered and unregistered fund products offered in the U.S., EMEA, and Australia, noted that a cultural view of compliance as being critical to our business is a cornerstone of success. Further, compliance programs must evolve with the business – you cannot simply "set it and forget it." With this view as a core principle, our approach to regulatory change, and subsequently to the creation of support systems and programs to facilitate compliance, can provide opportunities to move our industry forward and continue to serve the needs of the ultimate audience – the investing public.

As service providers, we have opportunities to provide data and support to our global asset manager clients in a more flexible and timely manner. With an understanding of the regulatory drivers of change, a nimble provider can help clients navigate the changing landscape and can identify synergies in the data extraction and collection processes. As asset managers, we have opportunities to leverage that data to inform our oversight programs and more effectively manage risk for our end investors. In the ideal state, if we as an industry can meet the needs around data and information exchange, it will allow us to focus on the "why" behind regulatory reform, rather than the "how." While it is certain that there will be challenges, as our business continues to evolve, global providers must connect and collaborate effectively to offer creative approaches to solutions that can meet the needs of regulators, managers, and investors around the globe.

SECTION 3

A FOCUS ON DATA

3.1 INTERVIEW

Ensuring compliance through industry leading data management practices

3.2 ROUNDTABLE DEBATE

Centralization of data – a blessing or a curse?

3.1 INTERVIEW

Ensuring compliance through industry leading data management practices

Interviewer

Noel Hillmann
Managing Director, Clear Path Analysis

Interviewee

Michael Herskovitz
Senior Vice President and Partner, Alliance Bernstein

Noel Hillmann: Thankyou for your time Michael.

With an abundance of new regulations and those expected in the future, what counts today as 'industry leading' in terms of data management practices?

Michael Herskovitz: On a worldwide basis what we have seen as a result of the last financial crisis is a desire from a number of regulatory authorities to get information about transactions and portfolio holdings as a means to aggregate data overall. There has also been a focus on how various types of clients' data needs to be managed. Key to data management practice is for companies to understand that data management is not a project but essentially a lifestyle: you have to treat it as an ongoing effort as opposed to a sporadic endeavour.

A lot of this stems from technical and social aspects. The social aspects involve ensuring that a proper governance structure is set up there needs to be ownership and stewardship of the data. One of the first questions you would ask someone responsible for data management within an organization is "who owns the data? i.e. who has the strongest interest in making sure that it is right?". From there, the big issue is how the organization masters the data. Whether it be information on counterparties, clients, transactions or instruments, it is crucial to be able to go back to the single source of truth from which individuals throughout the organization can refer. Organizations with highquality standards of information stewardship will have processes that ensure data is well managed.

Noel: How commercially important is data management that when dealing with your clients?

Michael: It is critical from a commercial point of view. When dealing with areas that are focused on regulatory compliance, the last thing you want to find is that you are being cited by the FCA ("Financial Conduct Authority") or FCC ("Federal Communications Commission") etc. because you misstated key data that needed to be filed with them. You don't want to end up with a poor reputation for managing your data. Quite apart from the regulators' standpoint, it is expensive to employ an army of people to correct and clean data which should have been correctly entered to begin with. Time spent on data from the beginning is less time spent on rework and, commercially, that turns out to be a much better proposition for companies.

Noel: Have you found that there has been a need for an increased budget over the past few years to cope with the increased regulation, or has the focus been on streamlining how you do things so there is no need for increased spending?

Michael: There has been a need for increased spending; some of this is on underlying technology, some on using the tools at the company's disposal to ensure high quality data. From a staffing point of view, it is more a reallocation of resources; some increase in staff has been required just to keep up with resulting requirements and oversee new systems. However, in some cases it was simply a matter of reallocating workloads and prioritization. Often, you can see an initial increase in spending to get the momentum going that turns into an exercise in reallocating staff from doing re work to overseeing new processes and governance structures. A couple of years ago we didn't have any clients who were designated in Europe as AIFMD ("Alternative Investment Fund Managers Directive") alternative fund managers that is now a critical distinction amongst some of our clients.

Noel: How have you developed your data management practices to deal with new rules and regulations?

Michael: I have been developing such practices for most of my career, starting with mortgagebacked securities, but also working in areas related to enterprise risk management. Over the past 9 years, the Lehman bankruptcy was the biggest catharsis for many of our firms. We already knew we needed to have an effective means of tracking credit and counter party risk exposures, but the Lehman episode reinforces the importance of doing it systematically to ensure that we can do it on a daily basis.

In 2010 we created a crossdisciplinary team which we call the Reference Data Strategy Committee; this brought together people from our business, technology, and operations teams to lay out data domains around instrument account, transaction and counterparty data. This was a multiyear effort and we needed to ensure that there was understanding and buyin from our business. We set up a master database of our counter-parties, accounts, transactions and instruments. This started by using a crossfunctional team which met on a regular basis with a couple of analysts and data analysts who we assigned to it. We established guidelines for how we needed to develop a strategy and began what has turned out to be a long journey of continual improvement in underlying data quality.

This has been extremely helpful as we have coped with issues like trade reporting in Europe with EMIR ("European Market Infrastructure Regulation"), or trade reporting in the U.S. Right now we are working on the trade repository for Australia, so our framework has proven adaptable and enables us to be flexible when working in different areas. While most countries and regions have not coordinated with each other and have followed their own regulatory journeys, they often follow approaches that variations on a theme so you want to try and deal with a lot of these challenges using a similar framework. This means that the challenge of doing transaction reports in Australia does not require an entirely separate team who are developing their own solution – we can build on what was done for transaction reporting in Europe.

It is vital to bring teams together across different groups, have an idea of how you can develop mastering approaches, and make sure that people feel that there is a clear need for and ownership of the data; you don't want to get too caught up in continually finding tactical solutions and then not having something which is repeatable on an ongoing basis.

Noel: How do you think a change can be brought about within internal teams to see data as crucial to the job? How do you incentivize people from other roles?

Michael: Engaging individuals throughout the organization, particularly where their job isn't to manage data, to recognize that we need to make a commitment to this type of work is difficult. We have found that scorecards and heat maps have worked very well as short term techniques to get information in front of some of our key users. Our employees are very analytical and focused so instead of going through a theoretical discussion, or talking about the beauty of your data model and sending them to sleep, something like a heat map which takes the information and says " here's what we are doing" about ensuring that we have all of the key reference data has worked very well. Heat maps give us a very visual way of sharing how changes can impact people e.g.in terms of the amount of time per person hour, or the approximate internal cost of not changing things. This aspect of visibility, transparency and associating it with a general cost seems to appeal to people throughout the organization. It has also been very important that we have been supported by the people at the top, ensuring our team is well-resourced and viewed by the general business as being senior. There is no better feeling than when some of our key data analysts meet up some of the portfolio managers, researchers, people in risk management etc. and they hear from these various sources that they don't have problems anymore. Although you may work on new types of issues that aspect of people feeling that we are getting there, and the issues that some may have run into 6 weeks ago aren't being seen anymore, is very rewarding.

Noel: What quantity of data do you need, how do you measure the quantity required and where does the benchmark for quality sit?

Michael: If you think about the quantity of data in most firms, we actually have more data then we need and it does raise the question of which is the correct data. We aren't overwhelmed with terabytes of data, so the actual quantity of what we need to have correct isn't really the overwhelming part; what can be hard is where you have areas of duplication because people couldn't trust a certain source of data so they developed their own list of brokers, or tracked their own accounts so that now there are two sources of potentially conflicting data and those need to be resolved. In terms of quality, there is no substitute for getting it right. Getting it 90% correct still means that you are going to have people spending most of their day finding some problems in data because we are dealing with tens to hundreds of thousands of data elements that could be out there so that even 5% being incorrect means that there could be many data elements that need to be brushed up.

There are a number of factors which could be related to bad data; for example, things like how many client reports need to be restated or, how many data elements might have been missed from a portfolio manager's report on a daily basis. Scorecards have helped with these areas, tracking how well we are performing our data entry functions. I have found that when you design certain practices and reporting practices around the idea that everyone needs to work on it every day, then you find that the quality of the information goes up dramatically because people are looking at it all the time. If you are designing something that only has to work once a month, sloppiness will come in because people feel that they have a couple of days to patch it up. When you make it available daily or online then it really builds the process around quality.

Noel: Thank you for sharing your thoughts on this topic.

3.2 ROUNDTABLE

Centralization of data – a blessing or a curse?

Moderator

Noel Hillmann
Managing Director, Clear Path Analysis

Panellists

Dan Moon
Global Head of Data Services, Russell Investments

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

Noel Hillmann: Thankyou for participating in this debate.

To begin, is all of your companies data centralized or in modules by business division, geography etc. and why?

Dan Moon: Russell is a global organization with core business lines and I am responsible for our global data strategy and governance. Our centralized data program has only begun to gain significant momentum in the last 3 years, so the centralized function is really just beginning to grow within our organization. The majority of the data still remains segregated in the systems that are managed by business divisions across geographies. The reason for this is that Russell has historically evolved as an entrepreneurial organization, and consequently the businesses all developed independently and organically. As data became more recognized as a core asset of the company, and the need for greater transparency across our global businesses became vital, the effort for centralization became a strategic initiative.

Craig Gatten: We are divisional at Manulife and I represent the Investments division supporting the production of data for the public markets asset management line of business globally. I am in the operations area of the business and collaborate closely with our technology partners to implement any new capabilities and changes to our environment.

Currently our data is managed by division and line of business within the Investment division. Within Manulife Asset Management public markets we have adopted a global platform that is aimed at centralizing data across geographies, those being North America, Europe and Asia.

In addition we have an initiative underway to consolidate data quality, governance, and management within the Investment division thereby centralizing across both lines of the business and geographies. This is not quite 3 years old but we have made significant progress over the last year.

Integration with other divisions within Manulife is something that we assessing at this time, as well as the ultimate goal being how we can centralize on a larger enterprise scale.

Noel: Dan, what drove the initial decision to centralize the data?

Dan: The decision to centralize data has really been due to the growth of the organization. As a global company, we needed to gain more transparency across the different regions and businesses. As I previously stated, it has really been gaining momentum in the last 3 years. As our business has advanced throughout my 20 year tenure, it has grown in direct multi-asset management solutions. With this progression, and our existing multimanager fund mandates, the data transparency requirements and the need for a centrally managed, scalable infrastructure and governance framework became a priority for the organization.

In collaboration with our I.T. department, we now have the infrastructure in place to support us globally, and are wellpositioned across our business divisions and geographies to manage our core data.

Noel: Does the strict processes required for the centralization of data create unintended but unproductive inefficiencies?

Dan: No, but the maturing of the centralized model does create a perception across the businesses that makes it a little bit challenging.

Getting the organization to adopt a centralized model and gaining their "buy in" creates perceived strict processes, which therefore forces them to look beyond what they are doing independently within their own business, and start understanding data impacts and usage more broadly across the company. When the businesses are acting independently and have their own infrastructure, it creates a sense of control for how they want to mature and manage their parts of the business. Centralization forces them to take a step back and see how what they are doing fits into the larger part of the organization.

Again, if the organization isn't buying into the centralized model then you will have challenges, as indicated by the business perspective, that you are adding costs, delaying their time to market, or potentially taking some of the control away from them with their ability to be nimble.

What we have found over the past 3 years, as the businesses have converted, is that the opposite is actually true. There is a reduction in costs, they are gaining scale, and they are seeing the benefit of having access to information from other businesses that wasn't necessarily available to them before.

So for us, it has been more of a perception rather than a true unproductive or unintended inefficiency that has been created.

Craig: We are currently maturing our data governance practices within the division as well as across divisions. We recently hired a Chief Data Officer to drive this process from a business perspective.

Centralization of data requires a strict process that you do need to adhere to and it definitely has a perception of being inefficient to a business user. More specifically it may appear to be time consuming to develop and data programs are long programs that do take time. Any company embarking on centralization of data in any way, shape or form will require an investment in their data strategy, design, and planning prior to implementation. The implementation also requires a considerable amount of time to ensure that it is done accurately and fit for purpose for the business users that are impacted.

The perception is that it is inefficient, but I do feel that most stakeholders see the long term value and expected cost savings down the road from the synergies that are created from centralization.

Noel: How do you decide on and accurately create a 'house style' for how data should be written, presented and shared?

Craig: From an operations perspective the consistency of data definitions is critical, which requires business stake holder engagement as early and as often as possible. Investment terms

> "Centralization of data requires a strict process that you do need to adhere to and it definitely has a perception of being inefficient to a business user"

can be used differently by different business users depending on their perspective but actually have the same underlying meaning or definition, so we took a considerable amount of time looking at critical data domains to determine the consistency of terminology so that we could get to a centralized state.

Determining what investment terms describe within the data model means that you have to look at the list of domains you have in play, prioritize them for your business and start looking at establishing consistency and engaging specific business stake holders in order to determine a consensus. This takes both time and a significant amount of communication.

On the application side, the creation of the tables, storage, and presentation to a business user requires collaboration with technology partners and vendors in order to determine the most effective way to perform this task.

Moving from an applicationspecific report to a centralized location to get a consistent meaning can be a significant change for a business user. The reporting layer needs to be user friendly requiring us to deploy Business Intelligence ("B.I.") tools, one primarily to facilitate this and extract information out of our storage area into a tool that they could combine with their own desktop analytics to create some reporting. We then had something to build on and to build out consistency over time as you add domains and add them into that accessible layer into the B.I tools.

Dan: Collaboration certainly is and has been key. Collaboration among the I.T. group and the investment business where our role was to make sure that we were getting agreement on the correct interpretation of the different types of data, the meta data, business glossary, etc., which is all very critical.

From the time that we set up our governance framework and started having discussions about this, communication has been the biggest challenge. We have a large, global organization and getting the key business leaders to buy in and commit the resources that are required to gain that agreement, combined with the regional communication to the other businesses, has been a challenge for us.

It has been a slow process on our side, but definitely something that the businesses are starting to see the value in. The communication is getting easier, but because centralizing data is a fairly complicated effort, getting quality communication to the masses is also challenging.

Noel: Are single platforms always the best solution for a wellran business?

Craig: Single platforms are the ideal, however there are a few platforms which can support multiple data domains and business needs effectively.

Single platforms should offer simplicity and efficiency as well as a controlled integration within the platform to the multiple internal and external sources. In addition it should provide an ability to adapt to changing business needs at the speed required by the business. A multiplatform approach that is based on data domains and usage of that data is probably a better solution.

Dan: One size certainly does not fit all and it is really dependent on your organization's context and what they are ultimately trying to achieve. Multi-platform strategies are typically a path taken to evolve towards a centralized data strategy. There are a lot of single platform solutions out there that are domainspecific, which are the best of breed for that particular domain. We have found that where we have those within our organization, our job is to tie these multiple platforms together so that there is a transparent single view for the organization.

Multiplatform is the path towards centralization and you may never actually get there entirely. I believe that it requires a strong governance framework around it to ensure that you are applying the same type of rules and principles to each platform within your multiplatform strategy.

Noel: Have you gone down the off the shelf route or have you developed your own technology for the management of data?

Dan: We have definitely taken a hybrid approach which includes a core off-the-shelf technology that we use for onboarding all enterprise data into the organization. Once it is onboarded and mastered, there is a combination of a proprietary built warehouse as well as proprietary built applications that help move the data around the organization and store it for consumption

Craig: Manulife is very similar as it is primarily "off the shelf" buy the functionality, but when you do purchase multiple applications you do have to put them together, so the integration of those applications to make data available for consumption is primarily an internal build.

Noel: Thank you both for sharing you views on this subject.

"One size certainly does not fit all and it is really dependent on your organization's context and what they are ultimately trying to achieve."

SECTION 4

THE PRACTICALITIES OF FUND TECHNOLOGY

4.1 INDUSTRY VIEWS

Client reporting: the business case for best practice automation

4.2 INTERVIEW

Aligning technology with the wider business goals – simultaneously pleasing both the C-Suite and the IT department

4.3 INTERVIEW

How technology and the availability of information on the Internet is helping to level the playing field for smaller asset management firms

4.1 INDUSTRY NEWS

Client reporting: the business case for best practice automation

Nicola Cowburn
Vice President
Marketing, SimCorp
Coric

Along with regulatory compliance and revenue growth, client servicing remains at the top of every asset manager's mustwin battle list. At the heart of client servicing lies client communications and reporting, one of the most client-centric functions in any asset manager's organization.

Today's clients expect responsive and engaging service that is personalized and relevant. The variety of digital channels that shape client experience is constantly evolving, and there is high demand for self-service tools that enable clients and relationship managers to manipulate performance data, and presentation views, whenever they want to.

Clients have become less sticky, so loyalty cannot be assumed. Investors are placing assets with multiple managers, and they are increasingly likely to switch if service fails, so it is clear to see why many asset managers are feeling the heat to up their game. Regular reviews aimed at sanity checking the effectiveness of the client reporting function, and ensuring it matches client requirements, are imperative. If a review of this kind reveals that your client reporting process is performing below par, you are not alone.

Fintech analyst firm CEB TowerGroup predicts that 51% of asset managers will either adopt a new client reporting automation solution (21%), or replace a legacy system (30%), within two years. Why? Because the vast majority of client reporting solutions that were in-house developed, or bought into the business more than five years ago, are failing to keep abreast of constantly changing client demands and technology shifts.

How to prepare a compelling business case that will win the fight for funding

Once the requirement for change is recognized, the project teams responsible for the client reporting function (typically client services, operations and/or marketing) must formulate a compelling business case that will gain Board approval. This can prove challenging, because client reporting projects sometimes compete for funding against regulatory initiatives aimed at averting the threat of hefty non-compliance fines. However quantifying the value of client reporting automation, and measuring return on investment in terms that the Board will find compelling, is surprisingly achievable.

In preparing a business case for client reporting automation, successful project teams adopt a threestep process that evaluates all relevant factors.

Step 1: Assess the cost of maintaining the status quo

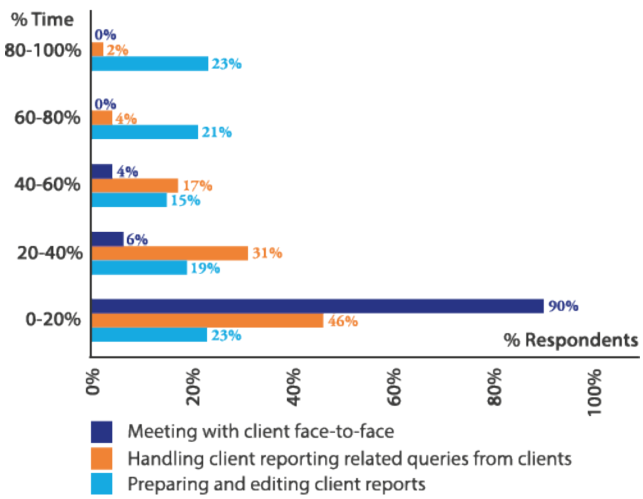
Every investment management firm has a client reporting function of some kind already in place, ranging from a manual process that generates output in Word, Excel or PowerPoint, through to a partially or wholly automated software solution that was either developed in-house, or sourced by a third party solution provider. The Board will want to know why change is necessary. What are the costs, or other adverse implications, of doing nothing?

It is useful to consider the following questions:

1. **Is your staff able to spend enough time on client facing activities?** Failure to allow business development staff and relationship managers to spend sufficient time engaging directly with clients, due to legacy client reporting processes, will thwart revenue growth.

   In a recent SimCorp poll, 90% of asset managers claimed to spend less than 20% of their time engaged in pro--active discussions with clients, in face-to-face meetings. They spend the remainder of their time preparing client meeting packs and meeting notes, compiling presentations and pitch books, handling client enquiries, and satisfying compliance requirements – a sure sign that operational inefficiency is rife within the reporting process.

What % of time is spent on the following?



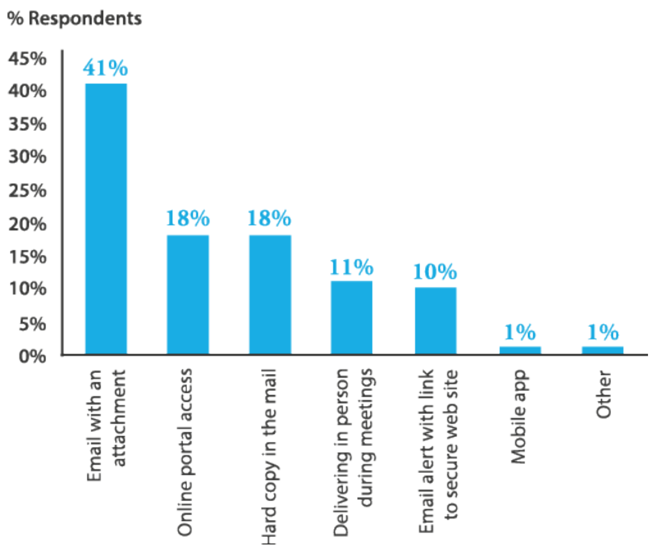
2. **Does your current service level ensure client loyalty?** If your client reporting process is prone to inaccuracy, hinders customization, is subject to delays, and creates inconsistency of data and branding across client communications, your current solution is underperforming and will contribute to client attrition in the long term.

3. **Is every report, fund fact sheet, pitchbook, or client meeting pack compliant?** If you lack confidence in your ability to ensure transparency, include all relevant disclaimers, deliver on time, and maintain audit trails that would withstand the rigors of the Regulator, you must take steps to mitigate your risk of non-compliance.

4. **Are you ready for the upsurge in online, mobile, and self-service?** In the SimCorp poll, the number of investment management firms distributing client reports via an online portal is less than half of the number that are distributing reports as an attachment to an email. This is disappointingly low, considering that clients now expect self-service capabilities, to enable them to slice, dice and view data in different forms, across different media.

   If you are not yet providing your clients and internal stakeholders with access to digital reporting and report generation tools, you are behind the curve. Consider whether you have the agility and access to skill sets required to deliver in a timely and profitable manner.

How do you distribute client reports?



5. **Do your business users fully control the client reporting process?** If your Client Services team requires IT to generate and modify reports, or create webpages, your process is too costly and your response rates are too slow. Self-sufficiency for business users delivers two quick, but sizeable wins – time and money.

6. **Is the total cost of ownership of your client reporting system acceptable?** If you are spending heavily on hardware and software licenses, racking up maintenance costs, and spending time managing system updates, you are wasting vital IT resources.

Evaluate your current situation – through the eyes of your clients and your chief financial officer – and count the true cost of settling for the status quo. This will bring clarity to your business case, and increase the likelihood of getting the green light from the Board to fund a more efficient, automated client reporting solution.

Step 2: Justify your proposal for best practice

Having established that your current client reporting solution will not effectively support your business into the future, the next step is to justify to the Board why you believe that a new or replacement "best practice" solution will be the most cost effective and time-efficient option for your firm.

Manual client reporting solutions are becoming untenable in today's technological and regulatory age, and the cost of maintaining and supporting (let alone evolving) homegrown solutions is costly and unmanageable. There is growing impetus for investment management firms to adopt best practice, off-the-shelf solutions.

Three key factors are driving this trend:

- the emergence of new, disruptive elements (e.g. digital and mobile channels, the Cloud, Millennials and globalization, to name just a few)
- the client insight, expertise and extensive skill sets required to develop best practice software solutions
- the need to focus on core business (investment management, that is, not system development)

In today's highly competitive climate investment management firms must focus entirely on the business of gaining and retaining clients. Those that begin to resemble tech shops tend to lack focus and have difficulty containing costs.

If you already have a third party client reporting system in place, getting a "Yes" from the Board in support of a replacement will involve a longer discussion, as there may be reluctance to sideline past investments. You must evaluate the extent to which your incumbent system is keeping pace with best practice. Typically, client reporting systems implemented more than five years ago are prone to technology obsolescence, key man dependency, and rising annual maintenance costs. Also, consider whether your business users are reliant on IT for report customizations and

Step 3: Calculate Return on Investment (ROI)

The final hurdle is to prove ROI to Board members, whose provocative questions will be "Can we afford this?" and "How long will it take to recoup our investment?"

Return on investment timescales vary significantly, depending on infrastructure choice, speed of implementation, and extent of deployment; however, you should be looking for a payback period of 12 to 18 months. Client reporting projects are unusual in that they generate savings during every reporting cycle, year after year, thereby continuing to generate ongoing profitable returns.

Automated client reporting solutions generate a multitude of savings that far exceed the cost of the system itself, although some are easier to quantify than others. A recent SimCorp white paper, Client Reporting: The Business Case, details a checklist of measurable elements, along with an account of the gains that are possible when a best practice approach is adopted.

Essentially, the savings and benefits that contribute to client reporting ROI fall into two categories:

1. **Direct cost savings**

   Direct cost savings are measurable dollars that will contribute to profitability as soon as the system is up and running.

   The most obvious example of direct cost savings relate to **processing manpower.** To what extent would automation reduce manpower requirements? If this manpower spent more time on client-facing work, than client reporting administration, how would that increase revenues? Given that up to 90% of manual reporting processes can be automated (100% for fund fact sheets), the direct cost savings are easy to extrapolate; even for a relatively small asset manager, annual manpower savings of more than $500k are achievable. Cost of growth is also a useful gauge, especially if your client onboarding rate is likely to rise, because the costperclient or perreport diminishes as volumes increase.

   The preparation of pitch books and client meeting packs is another mission-critical process that, when automated, generates impressive direct time and cost savings. Relationship managers can create and customize these client communications on the fly, simply by selecting pre-approved pages and sections from a wide variety of pre-configured on-screen layouts. All relevant disclaimers are automatically included, and branding consistency is assured.

   Other direct cost savings to factor into your ROI calculation include:

   - **Customization costs** - How long does it take to create, maintain and customize each template or report? What is the annual cost of customizations undertaken by IT?
   - **Report validation timescales** - How many reports are validated manually, and how long does that take? What is the manpower cost?
   - **Management control** - How much time and money does it take to monitor the reporting process? Does the management team have a holistic view of the process?
   - **Infrastructure and maintenance costs** - What is the total cost of ownership of your client reporting system? Are maintenance costs rising year-on-year?
   - **Carbon Footprint** - What is the annual cost of paper, ink, mailing and transportation for paper-based reports?

2. **Soft savings with high added value**

   Soft savings relate to benefits that will contribute monetary savings or revenue growth over time. They are less tangible or immediate than direct cost savings, and certainly more challenging to quantify. Nevertheless, they are a critical component of your business case, because they have an enduring impact on costs, revenues, and client satisfaction. Therefore, they contribute high value for your firm, over time.

   Soft savings and benefits include:

   - **Time spent with clients** – How much time do Relationship Managers spend engaging with clients? How many clients have you lost in the last 12 months? What is the cost of losing, and then replacing your average client?
   - **Branding consistency and quality** – What is the cost to your business of poor quality, inconsistently branded communications?
   - **Length of the reporting cycle** – How frequently have your reports been late in the last year? Are you satisfying client and regulator expectations? How many reruns have there been, and of what volumes? What is the total cost?
   - **Key man dependency** – How disruptive is it if a key staff member is absent during the reporting process, or leaves the firm?
   - **Relationship manager readiness** – How current are the reports that your Relationship Managers take to client meetings? Are they paper-based or digital? Which do clients prefer?

- **Staff morale, retention and recruitment** – What are your employees' satisfaction scores? What is your retention rate for talented staff?

- **Client centricity** – To what extent is your business data, process, or client-centric? What is the cost of an ineffective business model?

- **Risk of noncompliance** – How long would it take to produce a complete, accurate audit trail? How confident are you that all reports are fully compliant, and at what cost?

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4.2 INTERVIEW

Aligning technology with the wider business goals – simultaneously pleasing both the C-Suite and the IT department

Interviewer

Noel Hillmann
Managing Director, Clear Path Analysis

Interviewee

Michael Nadeau
US Chief Technology Officer, Pioneer Investments

Noel Hillmann: Welcome Michael and thak-you for joining me.

Responses to our market research accompanying this report highlighted that difficulties arise when attempting to please the needs of the C-Suite and the IT department: why aren't their needs aligned?

Michael Nadeau: When this happens, it likely boils down to a need for more frequent, bidirectional discussions and longer time horizons in strategy alignment. I.T. should invest time to explain the current state of technology, existing risks, and where investments are needed and why. If I.T. has to say, "We can't deliver that right away because we have to upgrade our platform first", it had better not be the first time the C-Suite hears about the aged platform. Rather, if they have heard about it before, it is easier to find an interim step toward delivering both the business strategy and meeting the Technology needs. You might even hear the C-Suite say, "We want X, but you have to first upgrade Y, correct?"

If both sides take a longer term view on strategy and share it with each other, then I.T. is much more likely to be there in time to deliver on the business strategy. I.T. should have a roadmap of upgrades and strategic platform developments, intertwined with business deliverables. It should include identification of dependencies and links between the two strategies. The business and C-Suite should know the IT roadmap and approve of it.

A simple example is this: we have a very well defined mobile strategy. Let's say company X does not. The business has a need for a certain app, so I.T. deploys a phone/mobile OS to deliver the needed app. The business returns later to request another business-critical app, and it does not work on the smartphone/OS just deployed. If both sides had earlier worked on a roadmap of expected needs in the mobile space, and I.T. had defined a strategy that married those needs with technology management needs (security, Mobile Device Management ("MDM"), etc.), then it would be less likely company X made an incorrect choice in the first place. In this case, in fact, maybe the proper mobile strategy is to support two different mobile platforms. Knowing this upfront could have ensured the proper surrounding technology, MDM, and support processes would be in place from the beginning to avoid a mad scramble when the request for App #2 arrived months later.

Noel: Why does the C-Suite struggle at times to understand the needs of the I.T. department?

Michael: Understandably, I.T. is not top of mind for the C-Suite, nor should it be. They focus on the direction of the firm, overall business strategy, sales and revenue, managing risk and the health and culture of the organization. They should not care about the platforms behind the services that we provide. They should just expect the correct services delivered seamlessly and costeffectively. If you are talking to the C-Suite often enough, you can explain, in business terms, why you have to make certain investments. For example, if they want to implement a new Customer Relationship Management ("CRM") for their sales force, they should be aware that IT might have to upgrade first in order to deliver

these business services and this may be a driver for higher project costs. We should not burden them with all of the details, but we can bring them to understand why we have to do things in certain ways. A coeducation in both directions will provide a much stronger alignment of strategies.

Noel: Please refer to an instance or instances where you've seen the needs of the I.T. department get out of line with that at the C-Suite level or vice versa? How did this happen, how could it have been avoided and how was it resolved?

Michael: I have seen this in past lives when IT is working on a solution that had no original business request, and then tries to find a use for it. The cliché is "a solution in search of a problem". A better approach is to bring the business along the journey of discovery, tease them with the new technologies, and then deliver some smaller showcase solutions to show what is possible. If they do not bite on the possibilities, then you have a little bit of throwaway work. If they like it and want to pursue it, then we have been an innovative, trusted partner. This approach is superior to building something, which, while nice, has no value for them.

As an example where we are approaching this in the preferred way described, we are currently introducing an Office 365 SharePoint collaboration platform. We need to update these platforms, and we want to enable the business to avail of more modern tools and functionality. We believe strongly in this platform and in replacing our aging corporate internet with a Social Intranet. When we talk social, we hear questions on the business value in liking someone else's post or commenting on a profile. Therefore, we are giving the business glimpses and showing them small snippets of what is possible. This helps us identify those who find it interesting, who can see how they might apply it to their department, and then want to talk more about it with us. Some become passionate allies, perhaps even "evangelists", for the changes we are introducing. We are creating a few "showcase sites," and hope we can build advocacy from those who are deriving true business value. Other business functions will hear about the success from these happy customers, not just from an eager I.T. team with a notsohidden agenda to update our platforms. This helps build support for a business case so we can start investing more in that technology.

If I.T. just goes off and builds something without anyone understanding why, then we are setting ourselves up for trouble. However, if we show the business how they could work better by actually letting them try something that we have spent limited time building, then we can get their support with incremental investment.

Noel: Is the role of Chief Technology Officer, and those in technology roles and at the middle management level, such that they do need to be a bit more senior in terms of the standing i.e. to be put on par with those who are heading operations more broadly or in product delivery roles?

Michael: Yes, we will have better results when peers are talking, keeping us away from the dreaded "order taker" role. I use the phrase 'trusted partner.' We might know of technology capabilities that could help the business that they have not asked for yet. However, we should not just go off and build them. We have to talk to the business unit about it. I strongly believe that every IT initiative that we work on should have written next to it, a business objective, a business sponsor, and the expected value. If we cannot define this alignment, we should be questioning why we are chasing this initiative in the first place.

I like the concept of modelling I.T. like a consulting company. For one, you have a relationship manager/engagement manager aligned to each of the major business heads so that they get to know each other to facilitate sharing and the aligning of the strategies. This is where I.T. can learn about what the business objectives are and bring the technology solutions forward. You have to be both senior enough and strong enough to talk their language and, in IT, you have to understand the business strategy as that way you can bring the right solutions to bear. Alignment is the key to I.T. success, and alignment with be improved when peers are building a relationship and an understanding of each other's priorities and challenges.

Noel: What needs to go into an effective corporate business plan from an I.T. perspective?

Michael: I can see two possibilities here. In one case, business defines their needs and then IT comes in to look at how we can enable this business plan. In the other case, the business might directly specify technology as the enabler in the business plan. For example, let's say the business wants to improve cross selling by sharing client intelligence across sales teams and building related campaigns using a CRM system. While I.T. might be able to suggest alternatives to implementing a CRM, it is clear that a CRM is the obvious solution. They have specified a technology product as core to their strategy. When they specify technology right at the heart of their business plan, we should try to be there at the ground floor, helping them prepare that part of the business plan during the process, not coming in later.

Noel: How can I.T. spend and resource needs be best assessed and planned for when changing corporate direction or launching a significant new initiative?

Michael: I try to rely on project management practices from the Project Management Institute ("PMI") and methodologies such as Rational Unified Process ("RUP"). We should start with discovery, elaborate and fill in details, and then plan to execute.

In the initial stages of a project or change management initiative, you don't know what you are going to need and can't possibly plan with precision. You need a twostep process. Some companies try to set an initial budget right out of the gate and then force the project to stick to it. This might allow sound and predictable corporate financial planning, but it could sacrifice so much more in terms of opportunity. It could create higher costs down the road because of inferior choices along the way in order to stick to a set, and perhaps unrealistic, budget.

Returning to the concept of modelling I.T. like a consulting firm. A consulting firm would never give me a fixed price bid without understanding completely what they are trying to deliver. They would come in and do exploration to understand our requirements. They would talk to us, give us a proposal, and finally provide a fixed price bid. Many will charge us for the initial discovery phase. Then, they would come back and tell us what it was going to take based on everything else they have learned to deliver the project. There would be a new proposed budget for the second step of the project. Why would we live with a fixed budget before we have defined the delivery work? A consulting firm would never to this. Internal IT should try to operate in a similar manner.

Noel: Thank you for sharing your thoughts on this topic.

4.3 INTERVIEW

How technology and the availability of information on the Internet is helping to level the playing field for smaller asset management firms?

Interviewer

Noel Hillmann
Managing Director,
Clear Path Analysis

Interviewee

Brett Lapierre
Director of Research,
Peak Capital
Management

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

I'd like to begin by asking, how do you utilize technology internally and what sources of information do you find most reliable and appropriate to your needs?

Brett Lapierre: We use some of the usual suspects in terms of technology providers like Morningstar Office, Salesforce, Money Guide Pro as well as some tools that are customized just to us. We also use the standard Microsoft Office suite for products and some other research websites such as Seeking Alpha, which is a blog site where we tend to review market commentary and other information.

There are some solutions that are very specific to the services that we use but many of these are fairly inexpensive relative to the technology of a Bloomberg or FactSet. We find that the ones we use provide good value and all of which we can utilize. We do find that some items of software tend to have many bells and whistles that smaller shops like us don't necessarily need so it can be overkill.

We find that a lot of the websites that we use tend to be fairly reliable data providers. We screen our own data and double check that against other public sources on occasion. The most reliable sets of data come from the big firms like Morningstar and our custodian, particularly in terms of security pricing.

Noel: How reliable is information that is available on the internet at very low cost, as if very, wouldn't all asset managers simply rely on this source of data to 'get an edge'?

Brett: Reliability is always the question no matter what data vendor or source you are using. Even the big, well established vendors are not immune to errors. Even though Morningstar Office does tend to be fairly reliable, on occasion we have found errors in their data. Although I would say that the overall reliability of the information on the internet has improved substantially over the 20 years that I have been in the business. It really is the source or the provider who you have to trust.

There is much more data available now than there was even 10 years ago. In terms of getting index performance you can go toStandard & Poor's website and get it directly, as they post their numbers on their website rather timely. A Bloomberg might not be as necessary for a smaller shop and the expense not justified if you are using just the index data.

Investment managers like the convenience of those other services like a Bloomberg or a Factset solution. Some of the bigger houses that I have worked with have had the ability to nail down the data in one place. This is very convenient and affordable for them versus a smaller shop.

I tend to utilize internally developed technology that allows us to pool data from different websites. This helps us minimize some expenses associated with getting data from various index providers. If you can use a little ingenuity, you can easily get the data you need as it is posted on the index providers' websites.

Noel: The emergence of another disruptive technology is almost a daily occurrence. How can smaller asset managers be expected to keep up with their bigger rivals large technology budgets, and how do they get around the problem?

Brett: I don't see the bigger guys as having been particularly quick to adopt new technology. For example, one of the fund companies that I use to work for was two Microsoft Office suite updates behind, so I wouldn't necessarily say that a lot of them are quick to adopt.

The bigger shops can dedicate more resources to understanding how the new technology works with their existing processes or how new technology can replace their existing systems.

The challenge that we have as a smaller shop is in deciding what technology to embrace given how we run our business. A lot of what is out there is overkill and hard to understand in terms of how it fits into our business.

The bigger firms have the larger budgets and the industry is extremely fragmented. The advantages for the big guys is that their budgets and ability to dedicate a team to improving the flow of information within a firm is already there.

For us as a smaller shop, we have the advantage in that we can adopt new technology quicker as there isn't as much bureaucracy to go through. If it simplifies our lives we generally make the move.

You have to look at what data needs you have, how you are managing your business, and whether you focus on individual stock and bond research or manager research. Those factors can drive your data and technology needs.

We need technology that provides information on individual securities, like company financials and such so we can monitor the investments we own. There is also the index data and ETF providers, which post their data daily. We can leverage that information in the form of indexes or attribution analysis on our holdings.

Small shops have to think about what they exactly want to accomplish and then find out what technologies are inexpensive before looking at the more expensive options.

Noel: Do you feel that it is easier for the smaller technology providers to take up the more disruptive technologies or new technology that is coming online? Alternatively, do they almost face a bigger risk by then taking it on compared to a larger house who has the budget to try out a number of different approaches before settling on the right one?

Brett: It depends on the type of technology that you are talking about as you've got to do your research. You can now for instance get various tablet devices, like iPads and Samsung options. However you need to address what the operating system is that you use, the location of your data and in what format it is in. If you are in Windows, as most of the industry is, then having Windows driven tablets may be more common to provide seamless integration across your business.

The biggest element is relying on testimonials from other small businesses. You can look at the feedback they provide to help you make that decision around transition. They may tell you that they use a certain technology which has been easy to use and which has made them more efficient and mobile.

"If you look across the industry, 'software as a service' is becoming the norm not just for the financial services industry but also other industries."

Noel: Is software as a service almost a necessity for small fund managers to stay level with their peers?

Brett: The days of having a software download and upgrading that whenever you feel like it, are dwindling. If you look across the industry, 'software as a service' is becoming the norm not just for the financial services industry but also other industries. Microsoft now has Office 365, so instead of buying Microsoft 2007 or 2010 you can have a seamless upgrade whenever one is available.

Software as a service does make a lot of sense and as the technology has improved you can now store items in the cloud. This is something I'm doing more and more as it enables me to work from more of my devices on the go as my data is always synched. This is the biggest advantage of having software as a service and utilizing it.

Embracing this kind of flexibility can make small shops more efficient and help them to better compete against their larger peers who have greater resources.

It is a necessity for the smaller shops but it is also a necessity for the larger players too.

Noel: Thank you for sharing your thoughts on your topic.

SECTION 5

THE FUTURE OF OUTSOURCING

5.1 INTERVIEW

The move towards a 'best of breed' outsourcing model

5.2 ROUNDTABLE

Where, when and how does outsourcing have a viable future?

5.1 INTERVIEW

The move towards a 'best of breed' outsourcing model

Interviewer

Noel Hillmann
Managing Director,
Clear Path Analysis

Interviewee

Tony da Silva
Managing Director, WMP Portfolios and Investment Administration Europe&Asia/Pac,Wellington Management Company

Noel Hillmann: What do you currently outsource and how did you come to the decision to pass over what you have to a third party partner?

Tony da Silva: We have a component-based outsourcing program within our Investment Administration division and we outsource a number of operational components to key business partners, including corporate actions, account reconciliations, trade communication, bank loan support, class actions processing, and derivatives operations. Outsourcing is just one of many strategies that we consider when building our operating model, including our staff location strategy, workflow and business processes, and the use of technology to build scalable and high quality solutions. Historically, we have outsourced components at two ends of the spectrum: those that are commoditized, where we are looking to leverage the institutional scale of the providers to which we outsource; and, on the other side, leveraging the unique skills of the outsourcing providers, tapping into the speedtomarket that they offer.

Noel: What constitutes 'best of breed' to you?

Tony: 'Best of breed' is specific to the organization in question, but it comes down to aligning the capabilities of the service provider with the requirements that we have for a particular component. For us, with our component outsourcing model it comes down to the service providers' willingness to offer the specific components to meet our needs. We have been able to work with our service providers to tailor the models to suit our needs, whilst working with them to meet industry standards and allowing them to create scale in their business models.

Noel: How do you go through the process of ensuring complete alignment?

Tony: It is both a 'top down' and 'bottom up' approach; we ensure that our strategies are aligned and that we have relationships formed at the top level of the organizations. We develop very detailed requirements for each of our arrangements, and we work with our service providers to ensure that they can meet these requirements. We also have very detailed SLAs ("Service-Level Agreements") to ensure that, as we are building the models, they are being built to our specification and that we have ongoing oversight techniques in place.

We also bring a broad set of disciplines to bear on the process; we have a Vendor Management Working Group that is comprised of resources from our legal and compliance, information and physical security, procurement, and finance departments in addition to operations and IT.

Noel: What types of question do you ask your custodian or administration provider about investment in technology and strategy, in so far as expanding their own capabilities is concerned, be it inhouse or partnering themselves with another party?

Tony: We look to ensure that senior management is committed to the service and to the component that we are outsourcing to them. We stay very close to the service providers on an ongoing basis and monitor the development of their operating platforms, both from a technology standpoint and a business operations perspective. We look at how their technology platforms are integrated – it is important to us that there is continuity of operations globally and that they're flexible enough to meet our service needs. What is important is that there is a standard core that is scalable and that there is enough flexible service delivery to meet our specific business requirements.

Noel: Do you demand certain levels of investment in technology on a yearly basis?

Tony: We don't necessarily get that pointed, but because of our componentbased model and the direct oversight that we have over each component we stay very close to our service providers and their investment in technology, working with them on enhancements, as well as future strategies.

Noel: Does increasing the number of outsource providers with whom you work pose any challenges if you are going to achieve 'best of breed' in each individual function?

Tony: Yes, there is definitely a balance to be struck between the number of service providers and the benefits of a 'best of breed' approach. We do seek to get scale where we can but not at the expense of having the right alignment of service requirements and capabilities. There is an impact on complexity from having multiple service providers as it is much easier to oversee one service provider than many. At the same time, it is much more difficult to oversee a relationship where the service requirements and the capabilities of the service provider are not aligned so again striking a balance is very important.

Noel: Is it the case that you see the value that you get from partners easily outweighing the cost of managing the relationship? What is the optimal number of providers you work with considering that you do want to have 'best of breed' as much as possible.

Tony: I couldn't quote and optimal number of service providers, but each outsourced component's cost/benefit stands on its own. We do monitor the cost/benefit of all of our outsource components on an on going basis to ensure that they are costeffective as business dynamics change. It is also important to note that our decisions are not solely based on cost. Speed to market, focus on core competency, and other potential considerations come into play.

Noel: The search for simplicity was rated as a key driver for managers in research that we conducted. Does using a 'best of breed' approach to outsourcing fly in the face of that simplicity as you seek the best providers in an individual area?

Tony: I don't believe that it flies in the face of that aim, but simplicity is something to be thoughtful about when developing and governing your outsourcing program. The more service providers you have, the greater the potential for complexity; but at the same time it is much more important to ensure appropriate alignment between your business requirements and the service capabilities of the providers with whom you work with.

Noel: Where do you feel that there is still room for further development from the service provider industry in terms of technology?

"The more service providers you have, the greater the potential for complexity"

Tony: Broadly speaking, in integrating and centralizing platforms globally. We run into challenges when service provider platforms don't talk to each other effectively, causing potential gaps in service.

Noel: Is that a very common challenge for you at the moment?

Tony: No, it isn't a challenge as much as it is a development point. I would suggest that the service providers with whom we work with do a very effective job of scaling and servicing our business.

Noel: Thank you for sharing your thoughts on this topic.

5.2 ROUNDTABLE

Where, when and how does outsourcing have a viable future?

Moderator

Noel Hillmann
Managing Director, Clear Path Analysis

Panellists

Dan Houlihan
Executive Vice President and Americas Head of Global Fund Services, Northern Trust

Marc Mallett
Vice President, Product & Managed Services, SimCorp North America

Panellists

Jim Stitt
Head of Data Management, RBC Global Asset Management

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

Noel Hillmann: Thank-you to the panel for joining me.

I'd like to begin with the question, how crucial are outsource providers to your business operations and what can't be done without them?

Jim Stitt: Outsource providers are becoming increasingly critical to our business but it isn't necessarly a function of what can't be done without them but what can't be done well. As an organization we need to look at where we can add and create value and there are certainly a lot of functions in the asset management industry that are not value add functions, items like striking Net Asset Values ("NAVs") or fund accounting which doesn't necessarily provide a lot of business value for us. Others would be data aggregation from index providers. We have contracts like other asset managers do with a dozen or more index providers and creating separate interfaces for each of those providers doesn't make sense. There is also a distinction to be made between outsourcing services and outsourcing infrastructure. We are certainly seeing a move to get out of the business of I.T hosting and like many other asset managers, we are bank owned so there is a big I.T infrastructure behind us. Nevertheless, we are starting to see more focus on software as a service for accounting, data management and other practices as well.

It is critically important to us to outsource aspects of our business particularly in operations but it comes in different flavours.

Noel: Do you feel that being banked backed allows you to be able to take advantage of a history of internal operational set up that asset managers have only developed more recently? Does this put you at a particular edge in terms of the ability to conduct certain operations internally that for other asset managers, who are more silo'd, they may struggle with?

Jim: There is a balance: bank infrastructure and technology is very slow moving but once it gets into a stable position in a production environment it is something that you have to be able to count for processing thousands, potentially millions of transactions a day. Our servers are in those same server centres, with deep back up that is afforded to the X thousand of RBC branches across Canada.

That being said, being able to move quickly as an asset manager must, can be a challenge with bank technology. Therefore our approach has been to partner with the Bank technology on infrastructure that is more commoditized.

Where we have specific needs around asset management platforms such as portfolio and risk management along with portfolio accounting, those are the areas where we have moved away from the traditional bank infrastructure and looked to outsource some of that to other parties.

Marc Mallett: I would agree that it is a positive and can be valuable for certain types of functions, but it can also be slow moving at times and doesn't always work at the speed that an asset manager needs it to. If you look at the outsourcing market, many of the large outsourcers are the large custody banks themselves; while there are certain areas and functions where they provide a high quality service to their clients, much of the industry has moved to leveraging the outsource provider to do the work. Working in a T+1 environment is something that many of the banks do well; but when you start to move towards more realtime, Tdriven processes, it is a challenge for the bank infrastructure to keep up with that in many instances. There are certain functions that play well in the outsourcing space and add value, but an asset manager needs to move at a speed that the banks typically aren't used to.

Dan Houlihan: It is true that a bank infrastructure is larger and, in certain instances, can be slower than a single asset manager might be. We are cognizant of this potential impact so when we think about how we deploy our operating model and technology solution, we are sensitive to the pace required for different business lines.

Middle office outsourcing is a very good example of the need for a heightened sense of urgency. In these cases, we leverage third party providers like a SunGard or other accounting vendor for front office performance and risk, to leverage the power of the bank infrastructure, risk management and quality controls to deliver it at the speed with which we need to execute for our clients.

Todd Healy: I agree with Jim which probably is in part because both our firms are owned by Canadian banks, but there is definitely a line that we have created in terms of what services we want to have within our operations groups and which we want to give to an outsource provider.

We've taken a more in house view in the past although it has continued to evolve and grow where we are now looking at more outsource providers on a case by case and service by service basis. The bigger question is really around how much outsourcing everyone needs and depending on the nimbleness, size and make up of each individual firm you are going to get a different answer. Some are going to be selfreliant and others are going to turn over the keys to Dan and his teams so that they can take over the middle office.

We've taken an approach of, how can we partner with data aggregation services and other very specific services? We outsource to a fund administrator rather than striking our own NAV's and engage a separate transfer agent. We are using a third party for those services so we definitely have a combination of insource as well as outsource approaches. We are looking, as cost continue to be a concern, and we need to continue to look at where there might be an opportunity to do things a bit better and take out some spend.

The bank security infrastructure holds up well for multiple parties on this roundtable in that it does a very nice job for them due to the very significant commitment from a bank standpoint regarding cyber security. This is something that we did not talk about a few years ago but is now front and center with the Securities and Exchange Committees ("SEC") guidance earlier this year.

As we are looking at third party providers those types of questions are coming to the forefront. We are working through these both internally as well as with potential third party outsource providers since this could be a show stopper for us.

Dan: There are tradeoffs but our clients do benefit in terms of capability. Outsourcing is a revenue business and a big growth engine for our firm, so we are investing considerable millions in our capabilities and expertise around the world. It is clear that a single asset manager would have difficulty over time, keeping up with the advances and enhancements that a large bank infrastructure and resources can deploy. So while the speed might be there for an asset manager, the tradeoff is capability in both breadth and depth.

Todd: I support what Dan has just said: he is running a revenue-generating team while I am running a cost generating team – two different perspectives that affect how to approach finding a solution. Dan can show a return on any investment made and that affects expectations. I need to sell it internally very differently and need to look at things from a costcontainment and riskmitigation perspective. It is a very different approach, so the ability to fund enhancements and keep at the cutting-edge of technology is probably slightly in favor of the outsource provider.

Marc: Not all outsourcers are created equal and they have all taken a different approach, in particular in middle office outsourcing or the Investment Book of Record ("IBOR").

Those who have implemented a truly global operating model, with single technology platforms, are actually providing, in some cases, both timeto-market and over time cost advantages and value to their clients. Most of the large providers haven't done that and are operating with multiple, disparate infrastructures and operating models around the world; not only can't they move fast, but they are also having to invest in basic capabilities. You are now putting your operations in the hands of an organization that is being regulated very differently to the asset management industry and under stricter regulatory constraints.

"Not all outsourcers are created equal and they have all taken a different approach"

You have to consider what functions you are willing to outsource and how far you can really go when you have outsourcing providers who are looking to not only deal with the issues of regulatory constraints, but also the low interest rate environment which is continuing to constrain profit. Net Interest Income ("NII"") has always been a huge driver for the large trust banks, which is something that they cannot rely on today. This is impacting their ability to make investments in new technology and new processes. It can cut both ways, so being a large bank does bring advantages of security and large balance sheets, but it can slow things down and potentially, over time, not deliver the value that you are looking for.

Noel: With the proliferation of regulation and cost compression that asset managers themselves face can outsourcers continue to offer the same level of services at the same level of operational risk and the same cost?

Dan: Yes and this is where it is a strength to be a bank. Rising costs, increased complexity and the pace of regulatory change are all drivers for outsourcing. Not only do our clients look to us for operational capability on regulation, but increasingly they want more advisorybased services. We can provide this at a level and scale that a single asset manager would struggle to achieve. This is particularly true in the middle to lower tier of the market where asset managers don't have access to the human capital or real capital that is required.

The key for providers is to deliver real value to our clients in responding to the regulatory challenges and turn it into net income, rather than taking it on as strictly a cost burden. On this front, some things are very straightforward to price, such as Form PF. However other areas have to be factored into our overall product pricing and market positioning strategy. There is no question that our clients are leaning on us heavily, not only on the operational side but also the advisory side.

Noel: The idea of then commercializing some of the regulation is that the asset manager is getting access to a sharing of cost rather than taking on the capital costs themselves. Is that the justification for you to be able to make the necessary investments in your background operations?

Dan: Absolutely. Another example which is quasiregulatory in nature is cyber security, where we are spending millions every year. Consider the mutual fund world where the independent fund director is expected to have a cybersecurity plan and almost a "Chief Cyber Officer" to oversee the activities of their fund accounting provider. The question of how to commercialize this deliverable is emerging and may become part of the service that we provide. A single asset manager may struggle to keep up with our capabilities and the investments that we continue to make in this area.

Noel: Marc what are your views on outsourcers being able to offer the same level of services at the same operational risks and costs?

Marc: I want to focus on outsourcing your IBOR or middle office. The market in terms of fund accounting and administration is very mature. Within that context, outsourcers are facing even greater regulatory and cost issues than the asset managers themselves. With interest rates at historic lows, that is a significant drain on profit for the large custody banks, which makes it difficult for them to continue to invest. Most of them have initiated very large operations and technology transformation projects over the past several years and those projects were not initiated to deliver better or more innovative service to their middle office clients it is really the opposite as they are looking to drive down cost and develop more efficient operating models.

As Todd appreciates, operating a middle office, whether profit-generating or not, is, at the end of the day, is all about efficiency and operating in an environment where you are reducing the unit cost of delivering the service. The large outsourcers already had a talent, experience and capability gap, when it came to supporting the middle office for investment managers. This is because many of the organizations grew up as core custody servicing organizations and it wasn't that long ago that many figured out that the middle office was a near realtime, T driven environment. Now, with these enterprise transformation projects that are underway, they are looking to eliminate the very people that have figured out how to operate an efficient investment manager middle office, and are investing in centers of excellence, both near and offshore.

With the question of cost, it is hard to argue that a centralized organization, delivering these services across dozens of clients, isn't going to be more cost-efficient; but we have a number of clients who have pulled these services back in house and are now delivering both middle and back office services from one platform at a lower cost than if they were to outsource. They are focusing more on the quality question and how one can deliver a higher quality service at a lower price point when facing the very same or even greater regulatory costcompression issues that the clients are.

Dan: The interest rate point is slightly old news in that all of the banks have been dealing with that for several years now.

We look at it from a revenue perspective since middle office outsourcing is one of the fastest growing segments in the bank and a big driver of our top line revenue. I am responsible for an asset servicing business that supports hundreds of fund managers, and this business is key to our long term revenue growth plans. Our capital allocation now versus five years ago is considerably larger, so we continue to make investments without significant downward cost pressure.

I agree with Marc's point that if you come at it from a pure cost perspective, the result will be an overfunctionalized and overregionalized operation, which can have an impact on quality if you are not careful. Fortunately we view it as a revenue opportunity and we design our operating models by working backwards from market requirements and client needs first and foremost.

Noel: Jim, do you have any comments on how outsourcers are reacting to regulations and general cost compression?

Jim: Interestingly I would turn it around and say that as we face money market reform, BCBS 239 and various other regulatory reform changes we are looking to our outsourcing partners for guidance as trusted partners. This means that we can choose a path of going it alone and trying to understand how to respond to some of these regulations. Alternatively, we can look to outsourcing partners who have truly solved some of these problems for their other clients or are solving them and can ask them to show us what they are using and seeing from their other clients. We can learn from their experience. That information doesn't have to solely come from us as we can learn from others.

This has been very helpful certainly with money market reform and our fund accounting business.

Todd: We've had a heavy reliance on our internal resource reacting to regulations. There are some outsourcing providers who we do lean on for some of their expertise particularly as it relates to the mutual fund specific business. However, depending on where we are at and what type of regulation it might be we are also utilizing some other third parties as subject matter experts in different topics be it Dodd Frank etc. where we are able to partner and gather that information.

We have not looked to bring everything to a third party source and hand over the keys. For us, the way that we have implemented systems and the efficiencies that we have recognized, we would not be able to drive down our operating costs going to a third party. So, if we were to move in that direction it would have to be because of risk mitigation or a major avoidance of a significant investment or something along those lines.

When you talk about the cost compression, we experience a lot of cost compression as an asset manager. Client and expectations in the marketplace about where fees are at, there is a constant pressure to drive those down. We see a trend over time of average fees in different asset categories continuing at a downward slope. So even on the asset management side we have a lot of compression on the cost side which means that cost containment has to be a strong focus at all times.

Noel: How are administrators and technology providers continuing the path of innovative operational developments that are demanded of them?

Marc: The approach that we are taking is one of driving down the complexity of the operating environment and providing a platform from which our clients can grow their business and meet their strategic objectives. We are doing this by helping them eliminate the number of duplicative systems and processes that they have within their organizations.

Our platform, SimCorp Dimension allows clients to support the entire investment lifecycle from portfolio management, investment decision-making and trading, all the way through to creating your portfolio accounting. A platform like this creates an efficient environment where you don't have to have dozens of staff to support data management because there is no duplicative data to manage. You don't have to have multiple separate accounting teams to deal with your IBOR or Accounting Book of Record since you have one team with one stream of transactions. What we are focused on is helping to drive that efficiency to make the operating environment as focused on exception management as possible; this is achieved through embedded workflow within the environment and technology that allows management to manage from a dashboard and allocate resources where necessary, throughout the day, so that if there is a spike in demand they can reallocate resources and there are KPIs created automatically to deliver that information to them.

You can certainly translate that to the outsourcing space for the providers who are leveraging technology like that, which is truly global, multi-jurisdictional and multiproduct. They can leverage capabilities like that to deliver a service and value to their clients. If they continue to operate with multiple disparate platforms it is very difficult for them to add value other than just transferring risk and cost from one party to the other.

Jim: Anyone who has been in the industry for more than 10 years has seen the ebb and flow of platforms whether it be accounting, data management, portfolio management platforms etc. One common theme is that there hasn't been a single leader for the past 15 years. There have been areas where one platform has led over another and a lot of this has to do with the speed at which technology is moving. As an outsourcing provider, the challenge is: how do you stay abreast of technology changes (particularly on the data side where 10 years ago it was Oracle and SQL and now there are all sorts of big data providers), given the length of time it takes to implement new platforms and the depth at which people plumb them into other systems.

It is interesting to consider who the next leader will be and what legacy systems it will leave behind.

Marc: I can't answer that from an outsourcing perspective but from a technology perspective I would agree with you that there hasn't been a real leader across the full investment life cycle. That is what we feel we are emerging into, as the next leader, as we have the only platform that can support the entire investment lifecycle from portfolio management through to striking NAVs and general ledger. We stay ahead of technology by investing 20% of our revenue in Research and Development ("R&D") it was over $60m last year and that is something that we have been doing for the past 20 years now. Unlike a lot of the other vendors that have come and gone, been acquired or have really lost focus on what their product is, SimCorp hasn't, and we are heading towards being the system of record for the investment management industry. We then want to integrate with some of the new technologies out there in order to support other initiatives.

Noel: So in your view, for those competitors of yours who have been acquired, what affect does this have on them innovating?

Marc: There have been a number of acquisitions recently in the Financial Technology ("FinTech") space. If you look at the products that have been acquired I don't believe that you can name one of those products that has continued to innovate and capture the market. There aren't very many independent financial technology firms left who are serving the investment management space. If you look at the deals where these acquisitions have occurred, really they have been driving efficiencies in those business models, eliminating R&D resources, consolidating technology development and product management and consolidating their presence in the market. This is so that they can reduce costs for the corporation, not so that they can innovate for their clients.

As an example, SS&C have just released a statistic that they reinvest about 7% in R&D across their entire stable of products which is increasing daybyday with acquisitions.

Noel: Dan you are an administrator and have seen people in your peer group who have made sizeable acquisitions in the past 24 months. What is your view on the continual innovation and what is the effect of acquiring technology providers to achieve the innovative abilities?

Dan: We will continue to innovate and invest in new technologies. We are very focused on pushing out better, faster and more capable front office desktop tools particularly around risk and performance. In some cases we will build our own tools, whereas in others we will rely on third parties. There is no question that the investments that we are making, particularly in our asset servicing business, are far larger than they were five years ago.

The technology transformation is a fair point and it is a consideration whether outsourcing to a custody bank or implementing a new accounting system. Asset managers then get into the philosophical debate about whether to insource or outsource the capability. We view it from a transformation standpoint as we have not grown from acquisition. We have a single instance of each system regardless of where our clients are around the world. This strategy has served us well and allows us to move relatively quickly.

However, outsourcing is more than just a technology play and it is difficult to place a value on how effectively we enable our clients to execute their business strategy better and faster than they would have with an internal infrastructure. We have a major service wrapper around the technology, and this service focus often extends beyond the typical day to day operations. We are now able to advise our clients around issues like global distribution and working through the maze of different products and regulations around the world. Hiring and retaining talent within the organization with the brain power to drive our continued evolution is something we are extremely focused on. We strive to be viewed as a knowledge company, working to ensure that our long term strategy is aligned with where the market is headed. Our focus on these intangibles can start to impact the top line of our clients, which increases our value proposition and changes the dynamic of that relationship for the better.

Todd: In terms of the concept of build versus buy, I have seen a significant shift within our business. In talking to peers, the idea of developing a solution internally versus looking for a third party as close to "off the shelf" as you can has changed significantly. There is a recognition that the ongoing maintenance, key man risk and all of these components that come with developing something internally have shifted so we, as an organization, are very rarely going to develop something internally. We are looking for a solution from a provider to help us bridge that gap.

This has changed considerably from the last 8 – 10 years and I can see the same thing happening from an infrastructure stand point as well. If you had come to me 8 years ago I would have said that I did not want to host something outside of our four walls but now that is actually becoming the preference not only for our firm but for a number of firms like ours.

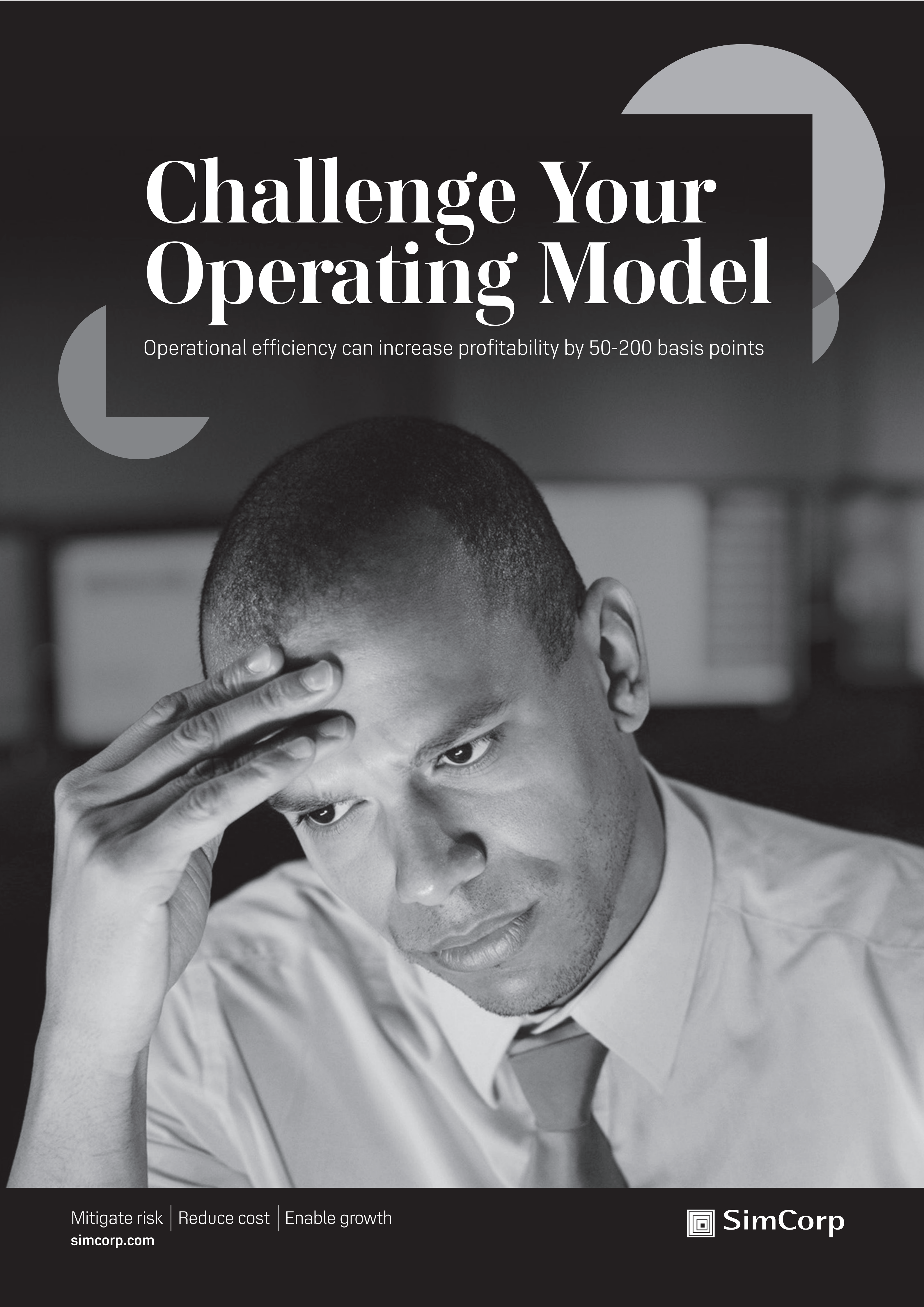
There has definitely been a shift from our point of view where we were not accepting of looking for shelf products, hosting and other tools out there and in relation to outsourcing, we felt we needed to do everything ourselves and this has changed.

This is significant for companies like SimCorp, Northern Trust and other outsource providers and vendors to be able to continue to build on the success that they have had.

It isn't really a question of should you or shouldn't you outsource. Each firm needs to decide where it makes sense for them, at their point in their lifecycle. For some, it is going to be internal and some may potentially move to a third party provider.

Jim: For us, we build where we can clearly distinguish ourselves from our competitors. If we can't, then we don't see the rationale and as Todd also noted, my views on this have changes over the past 10 years for sure.

Noel: Thank you all for sharing your thoughts on this subject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