Managing complexity and change in a new landscape
Global survey on asset management investment operations
Introduction

For our latest survey on asset management investment operations, we contacted chief operating officers (COOs) and heads of investment operations at traditional asset managers. We spoke with 40 leading global asset managers headquartered in the Americas and Europe with assets under management (AUM) spanning US$5 billion to more than US$1 trillion, with the majority of respondents managing between US$50 billion and US$500 billion. Our survey seeks to provide insight into four primary questions:

- What are the market forces and key drivers causing asset managers to assess and alter their existing operating models, operations and supporting technologies?
- What are the key areas of focus, including firm priorities and investments?
- What are the similarities and differences between small, medium and large asset managers, including geographic nuances?
- What leading practices contribute to success, and what does it look like today?

Various market forces and pressures, from increasing competition to sweeping regulatory change, are forcing global asset management firms to evaluate and evolve their operating models to support their business strategies:

- Competition is driving asset managers to focus on brand management and grow AUM through innovative new products, distribution channels and geographies.
- The changing and increasingly complex global regulatory environment is requiring asset managers to invest significantly in people, infrastructure, process, systems and data.
- Investors, regulators, boards and senior management are demanding more transparency and reporting, including new approaches to risk management and governance, as a result of the rapidly evolving global, regional and local regulatory and market landscape.
- Pressures to reduce costs and improve margins are causing firms to focus on operational efficiency and rationalize their existing product suite and asset classes.
- Rapid technology advancements from software vendors and third-party asset servicers have enabled firms to reduce infrastructure complexity and cost by rationalizing the number of applications, which has increased the opportunities for outsourcing.

These complex forces require firms to implement enterprise-wide transformational change spanning people, processes and controls, data, and business applications. Our survey indicates that leading asset management firms are now implementing change at an unprecedented rate.

COOs and managers of leading organizations are continually assessing their global operating model. Standing still is not an option. Operating models must evolve to support business strategies, safeguard competitive position and control costs in an increasingly complex regulatory environment.

EY’s 2013 survey of asset management operations provides insights on how leading firms are transforming their organizations to execute winning business strategies. We hope you find this report interesting and useful.

If you would like to discuss our findings in greater detail, please contact one of the members of our team.
Leaders of global asset management firms are driving their operations and technology organizations to transform business processes and technology infrastructures. To enable long-term competitiveness, firms are redefining their global operating models through:

- A global footprint that maximizes the use of the 24-hour clock for business processes and technology development while enabling trading across multiple time zones.
- The next generation of shared services organizations, outsourcing and data management programs to promote flexibility and responsiveness to changing investor and regulatory demands.
- Cost-management programs that include product rationalization, assessment of distribution channels, a critical review and rationalization of global business applications, and ongoing strategic assessment of the use of low-cost locations.

While specific areas of focus vary across small, medium and large firms, a number of common themes have emerged as firms reposition their global operating models in response to the convergence of long-term downward pressure on management fees and increased operating costs.

Driving asset growth by expanding global distribution channels and focusing on a premier client experience and brand management

In response to declining margins, firms are focusing their corporate strategies on distribution and brand management for asset growth. Across all respondents, improving distribution channels is the number one driver for diversifying and enabling business processes and technology development and testing, as well as performing selected operational functions such as reconciliations. And this expansion has been traditionally concentrated in a few locations. As medium and large forward-looking asset management firms evolve to the next generation of offshoring, they are increasingly looking to leverage their global footprint by creating a global operating model, where the technical and data infrastructure supports an increased number of business processes across the front-, middle- and back-office operations. Firms are creating global centers of excellence in a more diverse set of low-cost locations, balancing such trade-offs as proximity to senior management, cost of travel, information security, depth and breadth of skilled resources, and political and environmental factors. While the majority (55%) of all responding firms indicated that their primary location strategy was to maximize the uses of near-shore locations, for smaller and some mid-sized firms, nearshoring remains the more cost-effective approach.

Adopting a strategic approach to complying with a dynamic regulatory environment

Global firms must comply with a changing and complex regulatory environment that places significant demands on not only the compliance organization’s people and technology, but also on the core investment operations infrastructure overseen by the COO. Leading firms are differentiating their capabilities and competitiveness by holistically assessing and implementing strategic change programs to address a multitude of regulations by a multitude of regulators with all their overlaps and conflicts. While challenges and competitive opportunities span business processes and legacy applications, data management and its associated challenges of quality, timely delivery, effective analytics, and reporting are paramount. Medium to large global asset managers are implementing new and enhanced compliance programs that require changes to existing organizational structures, functional alignment, processes, systems and data to manage global regulatory compliance. For individual firms, the cost of compliance is substantial. For 44% of all firms globally, the cost of compliance represents between 11-25% of their operations budget.

Defining and implementing the next generation of global location strategy

Over the past decade, global expansion has been heavily focused on technology development and testing, as well as performing selected operational functions such as reconciliations. And this expansion has been traditionally concentrated in a few locations. As medium and large forward-looking asset management firms evolve to the next generation of offshoring, they are increasingly looking to leverage their global footprint by creating a global operating model, where the technical and data infrastructure supports an increased number of business processes across the front-, middle- and back-office operations. Firms are creating global centers of excellence in a more diverse set of low-cost locations, balancing such trade-offs as proximity to senior management, cost of travel, information security, depth and breadth of skilled resources, and political and environmental factors. While the majority (55%) of all responding firms indicated that their primary location strategy was to maximize the uses of near-shore locations, for smaller and some mid-sized firms, nearshoring remains the more cost-effective approach.

Expanding the use of third-party outsourcing throughout the operating model

Asset servicers are a fundamental component of an asset management firm’s global operating model. With the exception of a minority of firms, the question is no longer whether to outsource; instead, firms are considering which functions can be outsourced, the optimal number of providers to use and how third-party providers can be integrated effectively to enable timely data access by the enterprise.

Outsourcing has grown significantly in the last few years as firms drive outsourcing into the middle office and closer to the functions that traditionally interact with the front-office investment team, such as performance measurement and attribution. Even firms that are unlikely to outsource a significant number of functions use third-party providers for selected products such as exchange-traded funds (ETFs) or Undertakings for Collective Investment in
Rationalizing the number of business applications, adopting vendor solutions and driving toward simplicity throughout the systems infrastructure

The ability of leading software providers to support the scale, scope and global footprint of top asset management firms, along with the realization that technology is no longer a differentiator in many parts of the value chain, has enabled asset management firms to reduce infrastructure complexity and cost. For example, they are rationalizing the number of applications and replacing legacy custom applications with vendor-based solutions. In the front office, where large firms have historically supported two, three or more platforms based on asset type, the drive is to consolidate on a single trading and order management platform. Demonstrating how slowly this shift takes place across large, complex infrastructures, participating firms indicated that strategic spend far outweighed maintenance at 65% of the budget for smaller firms, while legacy infrastructure and greater complexity results in strategic spend outstripping maintenance by only 3%-4% in both medium and large firms.

For midsized firms, the move to vendor-based solutions or platform upgrades is being driven by software vendors that offer hosting solutions, thereby expanding the service model's flexibility and functionality. Of firms participating in the survey, only 15% of midsized firms indicated a broad use of custom business applications rather than licensing industry-standard third-party applications.

Expanding and maturing data management and information security programs

Operations and technology leadership in top-tier firms are driving their organizations to implement world-class data management standards. While few firms have developed an enterprise-wide data management platform with the exacting level of efficiency and quality standards demanded by stakeholders, committing resources to data management is a priority. Data plays a significant role in a firm’s ability to comply with global regulations, establish a truly global footprint and realize benefits from a wide array of cost management programs across the organization. Not surprisingly, the top five priorities of all responding firms are data quality and accuracy, support for increasing regulatory demands, timely availability of data, effective data governance, and support for enterprise reporting.

Surveyed firms agree on the importance of data governance and management, but how to accomplish the goal varies. Responding firms are closely split regarding the degree of data management standardization, with 50% having adopted common standards across the firm, and 43% choosing a hybrid model with enterprise-level and local standards. Not surprisingly, the percentage of firms adopting a single, common standard declines as firm size increases, with 67% of small firms using a common standard, and 80% of the largest firms choosing a hybrid model.

Identifying cost savings in existing shared services organizations

Establishing shared services can serve many purposes: streamlining operations prior to outsourcing, preparing for relocating all or part of the organization, or simply reducing operating costs and increasing the effectiveness of the control environment for processes viewed as too mission-critical to outsource. Centralizing and standardizing business processes, such as reconciliation or technology functions such as testing and data services, are mature practices across the industry. Seven in 10 firms surveyed maximize the use of shared services organizations for functions performed in house. While there remain a few smaller firms (under US$100 billion) that have yet to maximize shared services organizations, the structure is fully adopted by 100% of the largest firms surveyed.

For leading firms, the next phase of shared services organizations is focused on driving down costs through reassessing the location of the centers, as well as reviewing business functions that may have previously been considered too complex or close to the customer to be moved into a shared services organization. In addition, top-tier firms are adopting process excellence and efficiency methodologies that originated in manufacturing, such as lean process improvement, to drive efficiency, scale and cost savings in existing or new shared services organizations.
While managers across the globe face similar challenges, some interesting regional variations are clear:

- The US has recovered from the financial crisis and is squarely focused on growth, distribution of new products and geographical expansion.

- Europe, meanwhile, is still focused on regulation and cost containment, resulting in implementation of different operating models. European-based firms spend more than 50% of their operations budgets on compliance-related functions, as they must deal with local country and EU regulations layered on top of global regulations. Global regulations now also include the reach of the US Securities and Exchange Commission (SEC) and Internal Revenue Service (IRS).

- Small and midsize firms seek a truly global operating model to leverage the associated synergies, while large firms realize that their business is too complex for a single operating model and take a more regional approach. Some firms have begun to ask, “Maybe biggest isn’t best when it comes to margin?”

- Outsourcing post-trade execution functions is still a continuing trend. Although service providers have substantially enhanced their capabilities, there are still significant gaps in implementing a truly global outsourced service capability.

Participant profile

The purpose of the survey was to gather insights from senior operations executives — COOs and heads of operations — on challenges and direction of investment operations, technology, outsourcing, location strategy and use of centers of excellence. We spoke with 40 operations professionals at asset management organizations in North America, Europe and select Latin American markets. The respondents were both global and regional traditional asset managers.

<table>
<thead>
<tr>
<th>Respondent profile</th>
<th>40</th>
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<tbody>
<tr>
<td>Total</td>
<td></td>
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<tr>
<td>By geography</td>
<td></td>
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<tr>
<td>Americas</td>
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<td>Europe</td>
<td>19</td>
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<td>By AUM</td>
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<tr>
<td>Under US$100 billion</td>
<td>15</td>
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<td>US$100 billion–US$500 billion</td>
<td>20</td>
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<td>Over US$500 billion</td>
<td>5</td>
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<tr>
<td>By institutional type</td>
<td></td>
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<tr>
<td>Division of investment bank or diversified financial services firm</td>
<td>18</td>
</tr>
<tr>
<td>Division of insurance company</td>
<td>10</td>
</tr>
<tr>
<td>Independent asset management firm</td>
<td>12</td>
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</table>

AUM by product

- Mutual funds/collective investment vehicles 50%
- Separately managed accounts 9%
- Wealth management accounts 9%
- ETFs 6%
- Alternatives 9%

Note: Open-ended commentary segmentation shown by geographic region and AUM breakdown in US$ billions.
Improving distribution channels is key driver for changes to operating model

COOs are focused on improving margins by building infrastructure to support growth, creating new differentiated products and developing new distribution channels – while controlling costs through streamlining processes and controls.

To enable transformation, the first step is defining a target state for functional processes, applications and data architecture. Once the target state is defined, organizations assess current operations skills and technology to identify gaps and develop a road map to implement the changes with discrete milestones. The road map identifies critical dependencies on programs and initiatives at the enterprise level, such as compliance and data strategies.

Although nearly all respondents noted that growth is a key driver of change, European firms still face considerable regulatory challenges requiring continued prioritization of compliance spending and less focus on growth.

Which of the following is the primary driver(s) of changes in your operating model?

Primary drivers of change – total

- Improving distribution channels: 55%
- Enabling new products: 45%
- Changing regulatory landscape: 42%
- Targeting new geographic/demographic markets: 30%
- Increasing brand awareness: 15%
- Differentiation through increased value/lower cost: 10%

Primary drivers of change by region

- **Americas (21)**
  - Improving distribution channels: 26%
  - Enabling new products: 43%
  - Changing regulatory landscape: 19%
  - Targeting new geographic/demographic markets: 33%
  - Increasing brand awareness: 26%
  - Differentiation through increased value/lower cost: 0%

- **Europe (19)**
  - Improving distribution channels: 81%
  - Enabling new products: 47%
  - Changing regulatory landscape: 68%
  - Targeting new geographic/demographic markets: 26%
  - Increasing brand awareness: 24%
  - Differentiation through increased value/lower cost: 21%
“We’re always concerned that our application set can keep up with changing front-office needs in terms of new product development, globalization and more complicated security. From a strategic perspective, that’s something that we want to stay close to.”

CIO, Americas US$100b–US$500b AUM
Investment in enabling technologies and infrastructure is a top priority

One-third of firms consider their infrastructure very well aligned to the firm’s strategy.

To support their business strategies, firms need to assess business applications that support the trade life cycle from front to back, enterprise reporting, and sales and marketing. Not surprisingly, 8 in 10 firms indicated that investing in technology infrastructure was a top priority in enabling their stated business strategy.

It is imperative that the organization’s functional needs drive technology investment. The firm must assess critical resources, skills and functional processes to ensure a correct design of the most efficient and effective target operating model. The organization should engage stakeholders enterprise-wide across investment, risk, compliance, audit, technology, data, information security and finance functions to validate its transformational road map and investments in technology, as well as to confirm alignment across the entire organization.

What are your key priorities for infrastructure investment in the next fiscal year to support your stated business strategy?

Key priorities — total

- Investing in technology/infrastructure: 78%
- Improving process to reduce cost, enable scalability, increase quality: 55%
- Investing in people and skills development: 48%
- Enhanced control environment to manage risk and meet regulatory requirements: 38%
- Expanding geographic footprint: 25%
- Investing in strategic alliances: 22%

Key priorities by region

- Americas (21) vs Europe (19)
  - Investing in technology/infrastructure: 84% vs 71%
  - Improving process to reduce cost, enable scalability, increase quality: 74% vs 38%
  - Investing in people and skills development: 42% vs 52%
  - Enhanced control environment to manage risk and meet regulatory requirements: 37% vs 38%
  - Expanding geographic footprint: 16% vs 33%
  - Investing in strategic alliances: 11% vs 33%
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Risk management is a driving force as firms set their objectives for their target operating model

Given high-profile past failures in oversight and the ensuing regulatory response, it comes as no surprise that risk management is the primary objective of firms' target operating models. Stronger risk management is both a response to recent regulation and an effort to avoid costly operational errors.

Financial market developments in the past decade have prompted the use of a wider range of asset classes in search of returns and capital growth. This in turn exposes firms to a wider and more diverse universe of investment risks. Regulation in Europe has responded with heightened requirements for risk management, such as the Alternative Investment Fund Managers Directive (AIFMD) and UCITS. These increased requirements are leading to demands for improved understanding and transparency of risk and better responsiveness. Derivatives exposure produces challenges related to valuation, leverage and counterparty risk. An efficient process with accurate data is required to allow calculations and reporting to be completed quickly and accurately, especially in stressed markets.

Which of the following best describes the overall objective of your target operating model?

Overall objective of target operating model

Risk management: 48% (Total), 57% (Americas), 40% (Europe)
Increased quality/accuracy: 40% (Total), 52% (Americas), 26% (Europe)
Cost savings: 22% (Total), 32% (Americas), 14% (Europe)
Time-to-market: 15% (Total), 19% (Americas), 11% (Europe)
Investor confidence/confidentiality: 15% (Total), 24% (Americas), 5% (Europe)
Ability to replace fixed with variable costs: 12% (Total), 21% (Americas), 5% (Europe)
Capacity planning: 12% (Total), 19% (Americas), 5% (Europe)
Compliance with regulatory requirements is the top industry challenge

Due to the number of major regulatory changes with implementation deadlines on the horizon, enabling compliance remains a top operational challenge.

The investment operations processes, controls, applications and data infrastructure needed to enable governance and oversight will continue to be affected by the changing regulatory environment. Many firms continue to implement changes to their operating models to support regulations such as AIFMD, Foreign Account Tax Compliance Act (FATCA) and Solvency II. This is especially the case in Europe where, despite limited revenue growth, firms must continue to invest in infrastructure changes to comply with new regulations. For some firms, the sheer number of regulatory changes is hindering competitiveness by limiting their ability to plan forward-looking operating model changes.

Not surprisingly, European firms are spending more than others as they need to grapple with not only global but EU and local regulations.

Over half of independent asset managers indicated they have budgeted more than 10% of operations budgets on complying with regulatory requirements.

What do you believe are the industry's top three challenges for investment operations over the next 12 months?

Top industry challenges

- Compliance with regulatory requirements
- Cost pressure
- Investment product innovations
- Technology innovations
- Resource skills/talent management
- Data management and reporting

The chart shows the percentage of responses for each challenge across different regions.
Investment and fund accounting, performance measurement, and attribution are all resource-intensive activities and, therefore, cost-intensive, particularly for fixed income and derivatives. The drive for aggressive cost management and improvements in the latest generation of vendor software is enabling even the largest firms to implement a single integrated platform for mutual fund and separate accounts. Leading service providers are similarly looking at their strategic technology platforms and enhancing their capabilities to manage more product types on a single or tightly integrated platform.

Both manager and service provider trends are driven by the need to streamline data and processes, integrate with external parties, and support a more diverse and complex suite of products.

There remains little opportunity to reduce costs in two other high-cost areas: fund administration (financial reporting, tax management and board reporting) and valuation/pricing. Shared services and location strategies to minimize costs remain the best alternatives for firms with sufficient scale.

### Which three functions represent the highest costs to the firm, and for which three functions do you see the greatest opportunity to reduce operations costs?

**Highest function costs and opportunity to reduce: total (40)**

<table>
<thead>
<tr>
<th>Function</th>
<th>Highest costs</th>
<th>Greatest opportunity to reduce costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment/fund accounting</td>
<td>58%</td>
<td>35%</td>
</tr>
<tr>
<td>Performance measurement and attribution</td>
<td>28%</td>
<td>35%</td>
</tr>
<tr>
<td>Institutional client reporting and fee billing</td>
<td>25%</td>
<td>32%</td>
</tr>
<tr>
<td>Trade processing</td>
<td>25%</td>
<td>22%</td>
</tr>
<tr>
<td>Financial regulation, tax, management and board reporting</td>
<td>32%</td>
<td>20%</td>
</tr>
<tr>
<td>Retail client reporting and fee billing</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>Valuation and pricing</td>
<td>32%</td>
<td>18%</td>
</tr>
<tr>
<td>Reconciliation</td>
<td>20%</td>
<td>18%</td>
</tr>
<tr>
<td>Corporate actions</td>
<td>2%</td>
<td>15%</td>
</tr>
<tr>
<td>Post-trade compliance</td>
<td>10%</td>
<td>10%</td>
</tr>
</tbody>
</table>
Firms plan to maximize the use of nearshore and offshore locations to manage costs

As firms define their target state, location strategy is a primary consideration that will influence the functional, data and application investment needs and priorities.

Nearshore locations help firms achieve cost efficiencies and diversify site risk while maintaining the benefit of having operations in the same workday. This approach offers some of the cost reductions while allowing time-zone proximity for key trading support processes, such as confirmation and settlement and pricing/valuation. In the US, state and local tax considerations and concessions are a significant factor in location strategy for new middle- and back-office operations centers.

Traditional offshore locations, such as India and, increasingly Ireland, are used where scale for performing standardized operations, such as reconciliation, can still provide cost savings. The ability to operate on a 24-hour clock and the increased availability of talent are also valuable.

Not surprisingly, the larger the firm, the more likely it seeks to maximize nearshoring or offshoring strategies. Larger firms have the scale to benefit from these strategies, whereas for smaller firms the benefits do not always outweigh the costs.

For the operations activities you perform in-house, which of the following best describes your overall target location strategy?

Target approach: location strategy

- Maximize use of nearshore locations: 55%
- Maximize use of offshore locations: 20%
- Limited or no nearshoring or offshoring: 17%
- Don’t know/uncertain: 8%

Not shown in the chart:
- Under US$100b (15) - Maximize use of nearshore locations: 53%, Maximize use of offshore locations: 7%, Limited or no nearshoring or offshoring: 27%, Don’t know/uncertain: 13%
- US$100b-US$500b (20) - Maximize use of nearshore locations: 60%, Maximize use of offshore locations: 20%, Limited or no nearshoring or offshoring: 15%, Don’t know/uncertain: 5%
- Over US$500b (5) - Maximize use of nearshore locations: 40%, Maximize use of offshore locations: 60%
Most firms prefer one or two strategic outsource partners

Asset servicers have evolved their operational skills, understanding of risk and compliance, investment in leading technology, and focus on client service – all making the decision to outsource increasingly compelling.

Most firms target consolidation of outsourcing arrangements with one or two strategic partners. The optimal number of providers is a function of geographic footprint, product offerings and client base. Use of a single provider may help firms increase leverage over their providers and help minimize integration and oversight governance. However, these benefits need to be weighed against the benefit of diversification in minimizing supplier risk, even though this arrangement might cost more.

Although switching can be complex, risky and costly, establishing relationships with more than one provider can facilitate a possible transition, and can enable periodic comparison of costs and service levels. European firms are increasingly being challenged by their regulators to have an effective transition plan in place in the event of a service provider failure.

Regardless of the number of outsourcing partners, fund managers are choosing their administrator relationships with great care because administrator errors can lead to regulatory compliance problems and damage the fund manager’s reputation. Firms are even adopting periodic request for proposal (RFP) reviews of service providers’ capabilities given the dynamic changes in business models of both managers and service providers. Emphasis is now on administrators’ agility in responding to changes in the regulatory environment, and on their ability to provide access to data in a timely and flexible manner.

[If outsource or combination] Which of following best describes your target for an outsourced operations infrastructure?

Operations infrastructure: outsourced or combination

<table>
<thead>
<tr>
<th>Operations infrastructure</th>
<th>Use multiple best-in-class providers</th>
<th>Use one or two strategic partners</th>
<th>Don’t know/uncertain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under US$100b (9)</td>
<td>22%</td>
<td>67%</td>
<td>11%</td>
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<tr>
<td>US$100b–US$500b (13)</td>
<td>23%</td>
<td>69%</td>
<td>8%</td>
</tr>
<tr>
<td>Over US$500b (5)</td>
<td>40%</td>
<td>60%</td>
<td>0%</td>
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</table>
Firms are only beginning to realize the opportunity in outsourcing more complex processes

In general, asset managers globally are outsourcing functions for which service providers have more established capabilities, while early adopters – less than 10% of respondents – are using third-party firms for middle-office functions, such as performance measurement and attribution, post-trade compliance, client reporting and billing, and financial and tax reporting preparation. Outsourcing some of these latter activities depends highly on having accurate data with the necessary metadata attributes and significant levels of data integration with service providers. As service providers evolve their technology platforms to enable this integration, improve business applications, and enhance the knowledge and skills required to deliver the consistent and high-quality reporting required by the front office for these functions, it is likely outsourcing will become more prevalent.

Looking across all responding firms, fund accounting is a significant cost and is widely viewed as the greatest opportunity for cost reduction. Combined with the maturity of service providers to provide this capability, it is therefore not surprising that many firms now outsource fund accounting.

Is each function primarily outsourced to a third-party service provider, managed by an offshore or nearshore team, or executed by employees at the same location as the investment team?

Function outsourcing vs. internal resources: total (40)

- Internally focused functions
- Mature service provider capabilities
- High external impact, to investment team or investor
- Early service provider capabilities
- More complex processes
“We are seeking ... new resources who identify with the company. We already have a database and we’re always innovating to keep it up to date. Shared services are not the focus ... . [However], we are always looking for new executives that can bring new ideas to the company.”

Director of Investment Management, Americas
US$100b-US$500b AUM
Across asset management firms, the use of shared services is becoming the norm. The next step forward is likely to be the alignment across functions of production versus oversight skills and internal versus client-facing roles.

The implementation of shared services models requires a number of organizational changes: redesign of career paths, roles and responsibilities; definition of new oversight roles, service-level agreements and operational metrics tracking and reporting; enhanced training and development programs; communication and escalation protocols; and assessment of key controls and control monitoring. Once established, shared services organizations provide a framework for peer benchmarking of both efficiency and quality standards.

Most organizations already have central teams in place to handle most insourced functions. Creating a shared services organization is a strategic decision that is implemented across as many functions as possible. The shared services organization is a relatively mature concept in investment operations, yet realizing cost savings is an ongoing challenge as asset types and reporting requirements continually evolve. Data and technology must be well integrated to enable cost savings and efficiency gains; otherwise, a shared services organization risks being as inefficient as disparate teams.

Only a handful of larger firms have separate teams throughout the organization for each separate functional area. Here, scale and complexity to consolidate outweigh the benefits.

For those functions that continue to be performed by in-house resources, is the function performed by a central group globally across the entire asset management organization?

Use of shared services for insourced functions

<table>
<thead>
<tr>
<th>Function</th>
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<th>Yes</th>
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<tbody>
<tr>
<td>Trade processing (30)</td>
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<td>Reconciliation (27)</td>
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<td>Corporate actions (29)</td>
<td>31%</td>
<td>69%</td>
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<td>Valuation and pricing (26)</td>
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<td>Performance measurement and attribution (37)</td>
<td>27%</td>
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<td>Post-trade compliance (38)</td>
<td>24%</td>
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<td>Institutional client reporting and fee billing (35)</td>
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<td>Retail client reporting and fee billing (27)</td>
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</tr>
<tr>
<td>Financial regulation, tax, management and board reporting (38)</td>
<td>26%</td>
<td>71%</td>
</tr>
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Note: Where numbers do not add up to 100%, some respondents were uncertain.
Firms are facing many data management challenges

The increasing complexity of business, a more volatile macroeconomic and political environment, changing investor expectations, a tapestry of global regulatory requirements, the need for enhanced reporting and transparency, and stakeholder demands for stronger risk management have all raised the bar for data management.

Data management is an enterprise-level imperative that supports nearly every aspect of the business — from high-quality investment decision support, to regulatory reporting and risk management, and beyond the trade life cycle to product development and distribution, where data drives profitability analyses that inform product rationalization, product development and distribution effectiveness.

However, relatively few firms have implemented the data quality and efficiency standards that are necessary to support all aspects of their business.

While data management technologies are maturing, data silos still exist at many organizations. Leading asset managers are engaged in data initiatives to achieve a single source of truth and using tools to develop comprehensive metadata repositories to consolidate data and trace lineage and quality.

Firms that make progress are establishing the required governance frameworks and then taking a pragmatic and iterative approach, focusing on specific functions or specific products, then building on that model for success.

What are your top five challenges related to data and data management?

<table>
<thead>
<tr>
<th>Top data challenges – total</th>
<th>Top data challenges by AUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality and accuracy of data</td>
<td>Quality and accuracy of data</td>
</tr>
<tr>
<td>Increasing regulatory demands</td>
<td>Increasing regulatory demands</td>
</tr>
<tr>
<td>Availability of data</td>
<td>Availability of data</td>
</tr>
<tr>
<td>Data governance</td>
<td>Data governance</td>
</tr>
<tr>
<td>Reporting</td>
<td>Reporting</td>
</tr>
<tr>
<td>Timeliness</td>
<td>Timeliness</td>
</tr>
<tr>
<td>Changing business requirements</td>
<td>Changing business requirements</td>
</tr>
<tr>
<td>Utilizing data analytics</td>
<td>Utilizing data analytics</td>
</tr>
<tr>
<td>Redundancy</td>
<td>Redundancy</td>
</tr>
</tbody>
</table>

- **Quality and accuracy of data**: 75%
- **Increasing regulatory demands**: 62%
- **Availability of data**: 60%
- **Data governance**: 52%
- **Reporting**: 42%
- **Timeliness**: 40%
- **Changing business requirements**: 38%
- **Utilizing data analytics**: 28%
- **Redundancy**: 20%

<table>
<thead>
<tr>
<th>Under US$100b (15)</th>
<th>US$100b-US$500b (20)</th>
<th>Over US$500b (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality and accuracy of data</td>
<td>80%</td>
<td>70%</td>
</tr>
<tr>
<td>Increasing regulatory demands</td>
<td>67%</td>
<td>40%</td>
</tr>
<tr>
<td>Availability of data</td>
<td>45%</td>
<td>40%</td>
</tr>
<tr>
<td>Data governance</td>
<td>47%</td>
<td>50%</td>
</tr>
<tr>
<td>Reporting</td>
<td>60%</td>
<td>35%</td>
</tr>
<tr>
<td>Timeliness</td>
<td>45%</td>
<td>40%</td>
</tr>
<tr>
<td>Changing business requirements</td>
<td>30%</td>
<td>47%</td>
</tr>
<tr>
<td>Utilizing data analytics</td>
<td>40%</td>
<td>40%</td>
</tr>
<tr>
<td>Redundancy</td>
<td>7%</td>
<td>20%</td>
</tr>
</tbody>
</table>
“Our first action is strengthening the whole data governance area. Our key stakeholders are fully engaged; we set up a steering group and sub-working groups where each owns its data. Our focus is on strengthening this with the right governance.”

COO, Europe, US$100b–US$500b AUM
At most firms, the data management strategy is defined by a centralized team

In order to support their data needs and to reduce costs of enterprise data management, a sizeable majority of firms have chosen to centralize data management.

Irrespective of a firm’s approach to centralization, key steps to establish the framework for data governance and control are the same:

1. Identify ownership
2. Establish a single source of truth
3. Establish processes for data management
4. Define controls and monitoring and establish quality metrics for such standards as timeliness and frequency
5. Establish repositories to consolidate data and trace lineage and quality
6. Improve the design and implementation of new data solutions
7. Define an implementation plan based on discrete, measureable data sets

“... We’ve created our own data group. We’ve formed “a senior data committee” that deals with any challenges or areas of conflict and it meets on a quarterly basis. We’re big on investment in the data and on the programming side as well.”

CFO, Americas
US$100b–US$500b AUM

Which of the following best describes your target approach for data management?

Target approach: data strategy and management

- Under US$100b (15): 87% Defined by centralized data team in the enterprise, 13% Local to legal entity or functional area, No defined approach
- US$100b–US$500b (20): 75% Defined by centralized data team in the enterprise, 20% Local to legal entity or functional area, 5% No defined approach
- Over US$500b (5): 60% Defined by centralized data team in the enterprise, 40% Local to legal entity or functional area, No defined approach
A significant portion of technology budget is allocated to strategic investment

The need to balance investment in strategic technology versus maintenance of current infrastructure is an ongoing challenge for asset management firms.

For all but the smallest firms, the average proportion of IT budgets that are directed to strategic initiatives approaches 50%.

This bellwether ratio is an important measure to consider for undertaking any strategic transformation program, and it is key to allocating sufficient funds to investment.

To optimize spending, it is important to review — at the line-item level in the technology budget — all maintenance spend to identify initiatives that can be stopped or rescaled to “self-fund” some of the needed strategic investments in data, applications or integration. The critical step is to do this review in the context of a strategic road map, supported by the leadership in operations and technology to stop investments in initiatives that are not aligned to the new operating model.

“Our focus is to make our technology environment more robust, trying to reduce the number of applications we’re using, while at the same time making our data consistent across the organization.”

Director of Operations, Europe
US$100b–US$500b AUM

What proportion of your 2012 operations technology budget is allocated to maintenance versus strategic investment?

Proportion of budget — total

Proportion of budget by AUM

- Under US$100b (11): 35% maintenance, 65% strategic spend
- US$100b-US$500b (15): 48% maintenance, 52% strategic spend
- Over US$500b (4): 49% maintenance, 51% strategic spend

[Table showing proportions of budget by AUM]
Firms are focused on deploying and maintaining leading business applications

Firms require flexible and scalable technology that supports a number of objectives across the enterprise. They are focused on deploying the right business applications and establishing the data management infrastructure needed to do so. Whether priorities are supporting a global footprint, new client onboarding, supporting new products, efficiency throughout the trade life cycle, meeting regulatory requirements, improving customer service through digital technologies, or managing enterprise risk by providing a consolidated and granular view of the entire enterprise, asset managers are focusing on selecting the right applications to support them over the next several years.

For larger firms, the volume of data and the multitude of applications (multiple fund or investment accounting platforms, multiple order management applications, multiple compliance systems) across products and geographies present an even greater challenge.

“Our number one concern is the ability of our application technology environment to keep up with the necessary enhancements required to deal with new business, the business requirements and security types.”

COO, Americas

US$100b–US$500b AUM

What are your top two key technology priorities?

Key technology priorities – total

<table>
<thead>
<tr>
<th>Priority</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establishing and maintaining infrastructure with leading business apps</td>
<td>50%</td>
</tr>
<tr>
<td>Quality/timeliness/reliability of data across enterprise</td>
<td>45%</td>
</tr>
<tr>
<td>Reducing cost/increasing efficiency of services</td>
<td>28%</td>
</tr>
<tr>
<td>Enabling global footprint for multi-region support</td>
<td>18%</td>
</tr>
<tr>
<td>Integrating data to support new tools demanded by investors</td>
<td>18%</td>
</tr>
<tr>
<td>Enabling new technologies while maintaining information security standards</td>
<td>15%</td>
</tr>
</tbody>
</table>

Total (40)

Key technology priorities by AUM

<table>
<thead>
<tr>
<th>Priority</th>
<th>Under US$100b (15)</th>
<th>US$100–US$500b (20)</th>
<th>Over US$500b (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establishing and maintaining infrastructure with leading business apps</td>
<td>45%</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td>Quality/timeliness/reliability of data across enterprise</td>
<td>20%</td>
<td>60%</td>
<td>60%</td>
</tr>
<tr>
<td>Reducing cost/increasing efficiency of services</td>
<td>0%</td>
<td>25%</td>
<td>25%</td>
</tr>
<tr>
<td>Enabling global footprint for multi-region support</td>
<td>13%</td>
<td>25%</td>
<td>25%</td>
</tr>
<tr>
<td>Integrating data to support new tools demanded by investors</td>
<td>10%</td>
<td>20%</td>
<td>40%</td>
</tr>
<tr>
<td>Enabling new technologies while maintaining information security standards</td>
<td>10%</td>
<td>27%</td>
<td>0%</td>
</tr>
</tbody>
</table>
Steady progress is being made toward implementing of follow-the-sun 24/7 operations

The need for investment operations and technology to support the “follow-the-sun” business model, one in which the investment team is engaged in active trading 24 hours a day, is an ongoing challenge for firms as business models increase the number of locations, trading volume and product complexity. All large firms and a third of midsize firms have a follow-the-sun operations and technology strategy to support global trading. Only a few of the smaller firms require such a strategy. However, only half of the firms that indicated they have a follow-the-sun strategy have actually fully implemented it, with another third still in progress.

Do you have a follow-the-sun operations and technology strategy to support global trading?

<table>
<thead>
<tr>
<th>Follow-the-sun operations and technology strategy</th>
<th>Status of implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total (40)</td>
<td>Fully implemented 50%</td>
</tr>
<tr>
<td>Americas (21)</td>
<td>In progress 14%</td>
</tr>
<tr>
<td>Europe (19)</td>
<td>In planning 0%</td>
</tr>
<tr>
<td>Under US$100b (15)</td>
<td>Fully implemented 50%</td>
</tr>
<tr>
<td>US$100b-US$500b (20)</td>
<td>In progress 14%</td>
</tr>
<tr>
<td>Over US$500b (5)</td>
<td>In planning 0%</td>
</tr>
</tbody>
</table>

[If yes] Where are you in terms of implementing the strategy?

<table>
<thead>
<tr>
<th>Status of implementation</th>
<th>Total (14)</th>
<th>Americas (8)</th>
<th>Europe (6)</th>
<th>Under US$100b (2)</th>
<th>US$100b-US$500b (7)</th>
<th>Over US$500b (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fully implemented</td>
<td>50%</td>
<td>14%</td>
<td>38%</td>
<td>50%</td>
<td>43%</td>
<td>60%</td>
</tr>
<tr>
<td>In progress</td>
<td>14%</td>
<td>12%</td>
<td>33%</td>
<td>50%</td>
<td>43%</td>
<td>40%</td>
</tr>
<tr>
<td>In planning</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>
"Buy versus build" strategy varies across investment operations functions

Unique requirements, complexity and scale of resources make larger firms more willing to assume the risk of internal custom application development, particularly where these applications provide competitive advantages. By contrast, small and midsized firms seek to control cost by leveraging best-of-breed third-party applications. Third-party applications are optimal for firms where their complexity of infrastructure is low, scale of trading is low, pace of new product development is low, availability of internal technology and project management resources are limited, and viable third-party solutions meet most business requirements.

Although in-house applications for client reporting, fee billing, and financial, regulatory and board reporting pervade, firms increasingly are taking a fresh look at the application and process controls related to the fee calculation and billing processes. The use of ubiquitous tools, such as MS Access and Excel, offers the ability to manage large volumes of data and respond quickly to changing requests but poses significant control risks to the organization. Though standards for development, review, password protection, network access and documentation can lessen the risk, managers are increasingly seeking to control proliferation of these end-user tools within the organization.

For those functions your firm performs in house, please identify the description(s) that reflects the technology environment for each function.

Technology environment for in-house functions

<table>
<thead>
<tr>
<th>Function</th>
<th>Manual processes</th>
<th>Custom in-house apps</th>
<th>Third-party apps</th>
<th>Don't know/uncertain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade processing (30)</td>
<td>13%</td>
<td>30%</td>
<td>73%</td>
<td>10%</td>
</tr>
<tr>
<td>Reconciliation (29)</td>
<td>21%</td>
<td>28%</td>
<td>59%</td>
<td>7% 3%</td>
</tr>
<tr>
<td>Corporate actions (30)</td>
<td>33%</td>
<td>30%</td>
<td>47%</td>
<td>7% 3%</td>
</tr>
<tr>
<td>Valuation and pricing (27)</td>
<td>22%</td>
<td>30%</td>
<td>41%</td>
<td>22% 4%</td>
</tr>
<tr>
<td>Investment/fund accounting (22)</td>
<td>18%</td>
<td>36%</td>
<td>50%</td>
<td>9% 5%</td>
</tr>
<tr>
<td>Performance measurement and attribution (38)</td>
<td>11%</td>
<td>26%</td>
<td>68%</td>
<td>8%</td>
</tr>
<tr>
<td>Post-trade compliance (39)</td>
<td>10%</td>
<td>21%</td>
<td>72%</td>
<td>8%</td>
</tr>
<tr>
<td>Institutional client reporting and fee billing (36)</td>
<td>14%</td>
<td>47%</td>
<td>44%</td>
<td>6% 3%</td>
</tr>
<tr>
<td>Retail client reporting and fee billing (28)</td>
<td>14%</td>
<td>50%</td>
<td>21%</td>
<td>25% 4%</td>
</tr>
<tr>
<td>Financial regulation, tax, management and board reporting (39)</td>
<td>33%</td>
<td>41%</td>
<td>36%</td>
<td>5% 3%</td>
</tr>
</tbody>
</table>
Few asset managers plan to replace existing or current applications

New implementations are costly and are disruptive in the short-term, requiring resources from the business to ensure successful implementation.

However, one area of interest is the client reporting and fee billing application, driven by increased demands from investors for more complex fee arrangements and significantly more sophisticated investment reporting. Before replacing applications, firms should assess the end-to-end process for both these functions to identify opportunities for process, control and integration improvements. The downstream nature of these functions means they can rely on data from a number of disparate front-, middle- and back-office functions, resulting in highly manual, error-prone or time-consuming processes.

If you use a third-party application for a function in your current state, are you planning to replace the application in the future?

Plan to replace current application

<table>
<thead>
<tr>
<th>Function</th>
<th>No</th>
<th>Yes</th>
<th>Uncertain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade processing (24)</td>
<td>79%</td>
<td>13%</td>
<td>8%</td>
</tr>
<tr>
<td>Reconciliation (18)</td>
<td>78%</td>
<td>11%</td>
<td>11%</td>
</tr>
<tr>
<td>Corporate actions (16)</td>
<td>94%</td>
<td>6%</td>
<td></td>
</tr>
<tr>
<td>Valuation and pricing (15)</td>
<td>80%</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>Investment/fund accounting (13)</td>
<td>77%</td>
<td>23%</td>
<td></td>
</tr>
<tr>
<td>Performance measurement and attribution (29)</td>
<td>69%</td>
<td>17%</td>
<td>14%</td>
</tr>
<tr>
<td>Post-trade compliance (31)</td>
<td>84%</td>
<td>10%</td>
<td>6%</td>
</tr>
<tr>
<td>Institutional client reporting and fee billing (18)</td>
<td>61%</td>
<td>22%</td>
<td>17%</td>
</tr>
<tr>
<td>Retail client reporting and fee billing (11)</td>
<td>64%</td>
<td>18%</td>
<td>18%</td>
</tr>
<tr>
<td>Financial regulation, tax, management and board reporting (15)</td>
<td>87%</td>
<td>13%</td>
<td></td>
</tr>
</tbody>
</table>

- Mature market of vendor solutions
- Dominant providers
- Core position and trade data from execution to record-keeping
- More diverse market for vendor solutions
- Dependent on more complex data and metadata
- Requires involvement and directly affects functions beyond investment operations
Conclusion

Which firms will emerge the winners from this new market environment? A few critical success factors are becoming evident. Market leaders will be firms that can deliver on the following:

- Deliver customized and scalable solutions through effective data management and sophisticated client reporting tools. The ability of firms to effectively govern risk, drive process efficiencies, employ effective enabling technologies, integrate global organizations, meet regulatory requirements, drive product innovation and offer differential client experience depends on solving the increasingly complex data management challenges.

- Think differently about new capabilities that can be enabled with big data and emerging data technology capabilities. The volume, variety and velocity of data in asset management firms may be as great as, if not greater than, any other industry. The opportunity to ingrain advanced analytics and data-driven recommendations at the point of decision-making across investment teams, risk management, investment compliance and operations is a challenge few, if any, firms have mastered.

- Create flexibility within the operating model, enabling rapid response to client demands, market conditions and regulatory change. Operating in the global marketplace and expanding into emerging markets, while maintaining market share and margins in established markets, mean firms need to have organizational, technology and governance models that can respond rapidly, effectively and efficiently.

- Leverage external third-party service providers while increasing flexibility and speed to market. Third-party servicers are becoming a standard arrow in the quiver of leading firms. Whether asset managers use providers for specific products, regions or broad-based outsourcing, boards of directors and firm leadership are increasingly seeing the value in the role service providers can play in a global operating model.
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