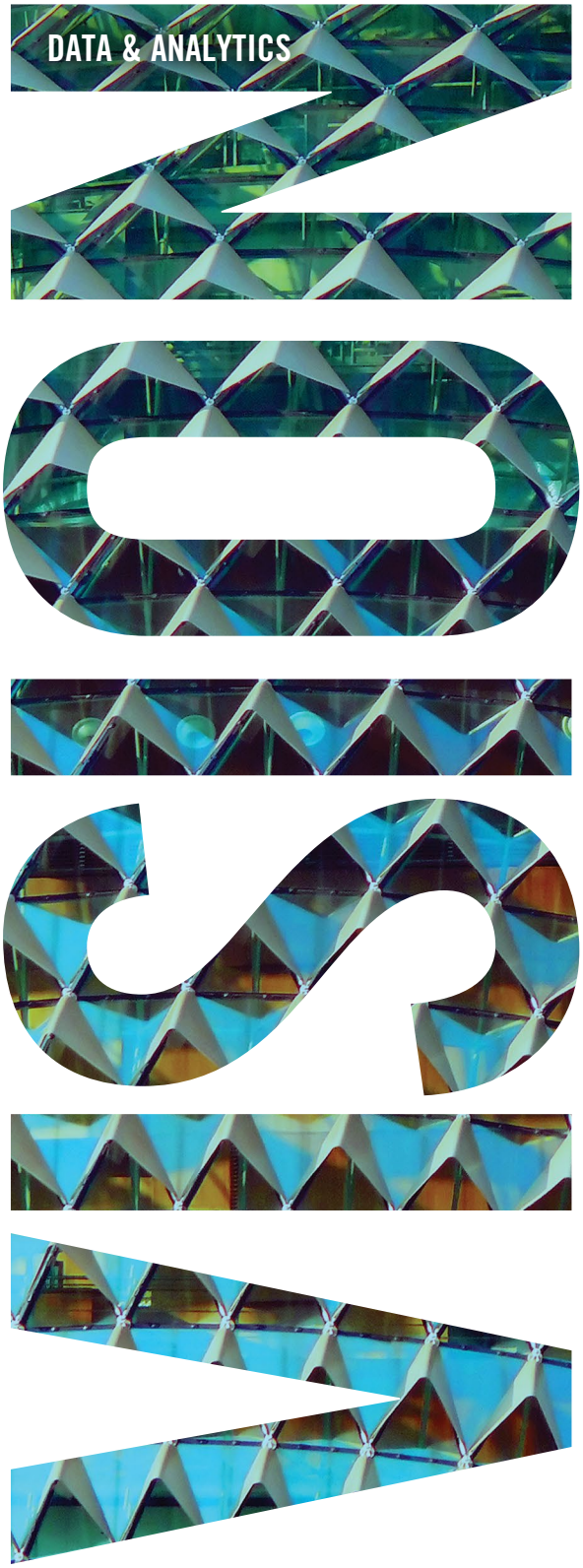
RETHINKING THE RISK BUSINESS

DATA AND ANALYTICS IN THE INSURANCE INDUSTRY

Insurance companies are investing heavily in data to improve risk management and boost returns across their investment portfolios.



STATE STREET®

This Is State Street

With $25.7 trillion in assets under custody and administration, and $2.1 trillion in assets under management* as of June 30, 2013, State Street is a leading financial services provider serving some of the world's most sophisticated institutions.

We offer a flexible suite of services that spans the investment spectrum, including investment management, research and trading, and investment servicing.

With operations in 29 countries serving clients in more than 100 geographic markets, our global reach, expertise, and unique combination of consistency and innovation help clients manage uncertainty, act on growth opportunities and enhance the value of their services.

State Street Corporation
State Street Financial Center
One Lincoln Street
Boston, Massachusetts 02111–2900
+1 617 786 3000
www.statestreet.com
NYSE ticker symbol: STT

For questions or comments about our Vision series,
e-mail us at **vision@statestreet.com**.

*This AUM includes the assets of the SPDR Gold Trust (approx. $37 billion as of June 30, 2013), for which State Street Global Markets, LLC, an affiliate of State Street Global Advisors, serves as the marketing agent.

About the Research

State Street commissioned the Economist Intelligence Unit (EIU) to survey more than 400 asset owners and asset managers — collectively termed institutional investors in this report — to gather insights into how they are using investment data and analytics. The survey — conducted from August to September 2013 — included 67 respondents from the insurance industry.

Among all respondents, roughly one-third were based in North America, one-third in Asia Pacific and one-third in Europe. All data featured in this report is derived from the State Street 2013 Data and Analytics Survey conducted by the Economist Intelligence Unit, unless otherwise noted. The survey results were supported by in-depth interviews with industry executives.

Introduction

Risk management has always been an integral part of the insurance business. Firms succeed through their ability to identify and manage risks facing their clients. But the nature of the risks that insurers need to manage is changing. On the investment side of the business, insurers face persistently low interest rates and fluctuating equity market returns. This is making traditional approaches to portfolio construction — such as 60/40 equity/bond allocations — increasingly obsolete.

Today, insurers need a more dynamic approach to meet their liabilities. This often entails increasing allocation to more complex asset classes. To manage risk and optimize performance across a highly diversified multi-asset class portfolio, insurers need timely, accurate data and the ability to test multiple scenarios quickly and efficiently. Additionally, regulatory compliance continues to be a major challenge for the industry. Some of the most high-profile regulations set exacting new standards for the way insurers manage their data.

This combination of a dynamic market environment and a more stringent regulatory regime creates the need for stronger data systems and analytics. More than ever, chief investment officers (CIOs) need readily-available data on investment opportunities and risks. Valid data helps insurers to both manage risks in the portfolio and make the right decisions to optimize returns.

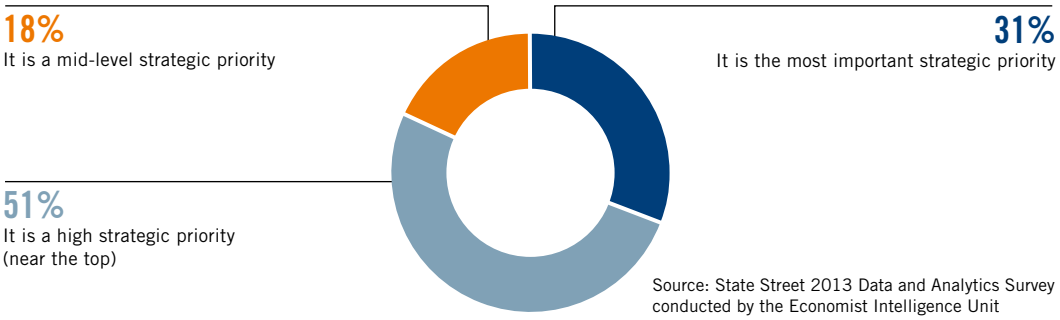
“It’s an intensely challenging time for insurers,” comments Martha Whitman, head of insurance sector solutions, EMEA, at State Street. “They need more sophisticated tools to manage multi-asset portfolios, and they also need to master regulatory complexity. These issues are putting huge strains on insurers’ existing data systems.”

Key Conclusions

- **Insurers are rethinking their investment businesses.** New investment goals and strategies need to be supported by state-of-the-art data processes and systems.
- **Multi-asset portfolios create a new challenge in how the industry evaluates risk.** Only 19 percent of insurers believe their multi-asset class risk tools are a significant strength — the lowest for any industry sector in our survey.
- **Regulation will accelerate investment in technology.** Tools to manage regulation in multiple jurisdictions are a priority for 37 percent of insurers.
- **Insurers need to streamline their legacy systems.** Insurance stands out in our survey as the sector with some of the biggest challenges around data management. Only 16 percent of insurers were very confident in being able to manage multiple internal and external data streams.
- **"Data leaders" will dominate the industry.** Nearly two-thirds (61 percent) of insurance executives in our survey agree that data and analytics capabilities will be among their most important competitive advantages in the future. But only a minority feels confident about deriving a competitive advantage from these capabilities today — a group we have termed "data leaders."

Data is increasingly central to insurance companies' ability to rise to the challenges outlined in this report. Our survey shows that today's global insurers are fully aware of what is at stake, with 82 percent of insurance executives viewing data and analytics as a strategic priority (see Figure 1). The challenge they face now is to turn today's fragmented IT systems into a strong and flexible platform capable of adapting to the demands of a more complex and volatile investment climate.

Figure 1: How do the most senior leaders at your institution view the importance of investment data and analytics relative to other major strategic priorities? (Insurance respondents only)



Source: State Street 2013 Data and Analytics Survey conducted by the Economist Intelligence Unit

Strengthening the Investment Business

Five Drivers of Change in the Insurance Industry

	Strategic Impact	Data Challenge
More stringent risk management standards	Regulators are demanding greater transparency	Collect, extract, standardize and report on the right information
Competitive pressure	Insurers need to identify opportunities for performance improvements and enhancing investment returns	Tools that enable better allocation decisions and ability to execute rapidly on opportunities
Regulatory complexity	Greatly increased reporting requirements imposing compliance costs and complexity on the business, and requiring changes to asset allocation	Flexible platforms allowing data to be collected, transformed and reported across multiple regulatory regimes; closer alignment between capital management and investment approach
Growing volume of trading data	Proliferation of data across multiple platforms and systems	Better integration and standardization of data, and multi-asset class trading platforms
Better tools to drive investment performance	New investment goals and tighter performance management	Custom benchmarks that align performance metrics with insurance firms' specific objectives

Asset classes traditionally favored by the insurance sector — such as government bonds — have delivered poor investment returns since the global financial crisis. German government 5-year bond rates, for example, have been below 3 percent since 2008 and near or under 1 percent for more than a year.[1] Similarly, American 5-year Treasury bill yields have also been below 3 percent during the entire period and between 0.5 percent and 1.5 percent since the second half of 2011.[2] One of the ways that the industry is responding to this environment is to increase allocations to alternative asset classes.

Ian Coulman, CIO of Pool Reinsurance, explains the motivation for new investment approaches at his firm. "We want to diversify risk, but we also want to look at how we can enhance returns," he says. In the case of his firm, like other insurance companies, there's a big focus on infrastructure as an asset class. But hedge funds, private equity and real estate are also some of the alternatives that are now being embraced by insurers as they search for higher yields.

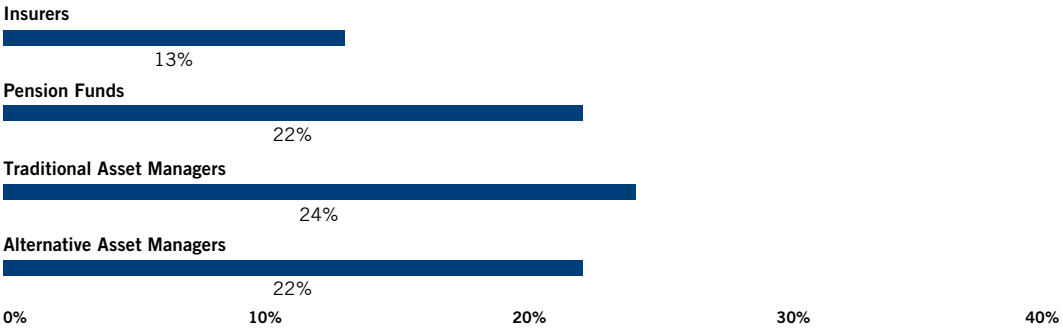
Insurance companies recognize that the shift to multi-asset portfolios carries risks as well as opportunities. In another State Street survey of the insurance industry recently conducted by the Economist Intelligence Unit, 79 percent of respondents identified the move into alternative assets as a challenge.[3] Understanding how the risk and performance characteristics associated with each asset class interrelate is extremely data intensive, and represents a major test for investment platforms and capabilities. Data from a wide range of internal and external data streams needs to be integrated and transformed before it can be analyzed. Today, many insurance firms' systems are not up to the task. In our survey, only 13 percent of insurers considered their firms' enterprise-wide data management to be a significant strength — the lowest proportion of respondents from any sector (see Figure 2).

[1] Bloomberg, accessed November 2013. http://www.bloomberg.com/quote/GDBR5:IND/chart.

[2] US Department of Treasury Resource Center, accessed November 2013. http://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/Historic-LongTerm-Rate-Data-Visualization.aspx.

[3] 2013 State Street Insurance Survey conducted by the Economist Intelligence Unit.

Figure 2: Respondents identifying enterprise-wide data management and warehousing as a significant strength in their institution



Source: State Street 2013 Data and Analytics Survey conducted by the Economist Intelligence Unit

Insurers are also the least likely to rank their multi-asset risk tools highly. This is a concern, given that the shift to alternatives exposes insurers to a new realm of risk. They are, however, acutely aware that these weaknesses need to be addressed if they are to thrive in the new investment environment. Among the insurance executives surveyed for this report, just short of two-thirds (61 percent) expect to increase their investment in risk analytics in the next three years.

Regulatory Transformation

The wave of new regulation hitting the insurance industry is also having a marked impact on the way insurers think about their investment strategies. Solvency II, in particular, is creating significant challenges for insurers operating in Europe.

Solvency II places major demands on insurers' technology infrastructures, partly because it applies a "look through" principle that will require insurers to provide underlying data on investments — even if they are contained in funds or fund-of-fund instruments. On top of this, Solvency II also requires firms to assess the sufficiency and quality of data used to calculate its technical provisions. David Bird, capital management actuary at Royal London, notes that even before this regulation enters full effect, regulators are increasingly making ad hoc requests for asset data.

Given these issues, it's no surprise that insurers view regulation as one of the most powerful reasons for upgrading their data infrastructure. In our survey, 37 percent say tools to manage regulation in multiple jurisdictions will be one of their top priorities over the next three years.

Despite the importance of meeting compliance obligations, insurance executives also emphasize the need to translate compliance spending into broader benefits for the business. "Meeting regulatory demands is necessary but not sufficient," explains Scott Anderson, director of Performance and Risk, Investments, at American Family Insurance. "We have to comply, but we also need to use data to create opportunities." Since several regulations require better data integration, analysis and reporting, leading insurers are using their compliance programs as the launchpad for a more strategic and ambitious overhaul of their data and IT systems.

An Alternative Goes Mainstream

Insurance companies looking to boost income are increasingly turning to alternative investments and infrastructure funding. Legal & General, for example, plans to increase its infrastructure investments from £3 billion to £15 billion over the next decade.[4] Similarly, AXA intends to put €10 billion into infrastructure debt over the next five years as part of its portfolio diversification.[5] Ian Coulman, CIO of Pool Reinsurance, sees this as part of a broader trend. "As banks are less inclined to invest in infrastructure projects, a new market is developing, with pension plans and insurance companies at the forefront," he says.

Coulman notes that infrastructure investments present greater data challenges than even other alternative investments. "Data on these projects is less readily available," he says. Frequently, this information is obtained through contacts rather than more public sources. Moreover, such data are not standardized, making risk and return comparisons within the asset class or with other types of investment more difficult.

Nevertheless, as insurers learn more about these asset classes, they are developing the tools and strategies they need to understand performance and risk. "Getting the data is still difficult, but as more managers have started to establish a platform for infrastructure, [the data] is becoming timelier and certainly more readily available," says Coulman.

[4] "Legal & General in £15bn infrastructure pledge for UK but HS2 will miss out," *Daily Telegraph*, August 2013 http://www.telegraph.co.uk/finance/newsbysector/constructionandproperty/10220975/Legal-and-General-in-15bn-infrastructure-pledge-for-UK-but-HS2-will-miss-out.html.

[5] "Facing the Future: A Blueprint for Growth," State Street, July 2013.

Data That Delivers a Better Return

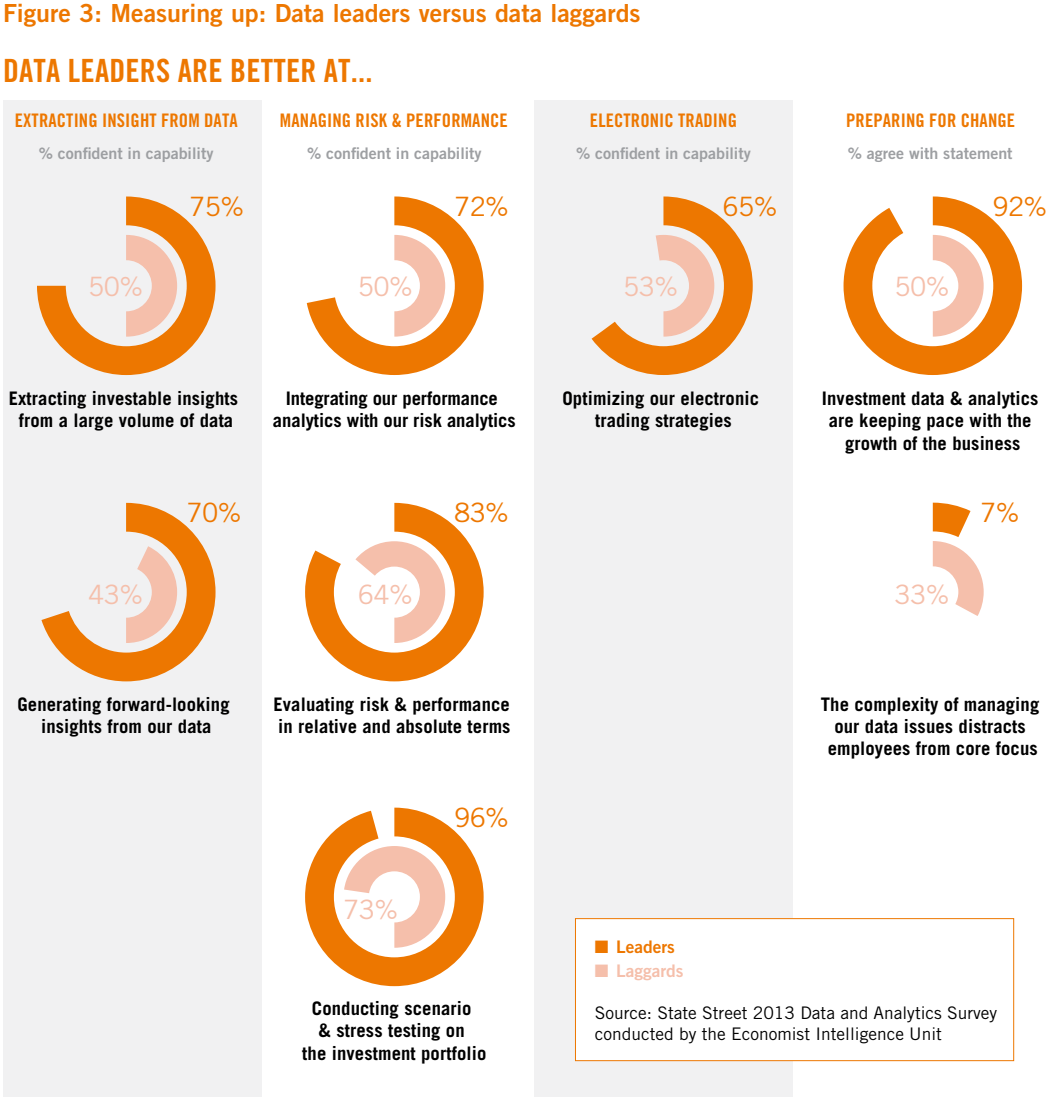
While so many of the companies in our survey see data and analytics as a key source of competitive advantage, exploiting the full power of their data is a learning curve.

Our overall survey revealed a clear gap between the "data leaders" — institutional investors who are confident they already gain a competitive advantage from their data and analytics — and data laggards, who struggle to harness the full value of their data.[6] Figure 3 shows a wide range of areas where the data leaders perform higher than the data laggards in our survey.

This "digital divide" among institutional investors is very clear in the insurance sector in the survey, where only 21 percent of insurers fall into the category of data leaders. As data leaders tend to have stronger tools for risk and performance management, as well as better platforms to act rapidly on new investment insights, their proficiency with data gives them a sizable advantage over their peers.

[6] Leaders are defined as those who strongly agreed in the survey that "Our investment data and analytics capabilities are a source of competitive advantage for us." Laggards are those who do not agree with this statement (some of this group disagree, most neither agree nor disagree). Using this analysis, 118 (29 percent) of the firms (across all sectors) in the survey could be described as data leaders, while 94 (23 percent) were data laggards. Somewhere in the middle, there were the 48 who only mildly agreed that they gained some competitive advantage from their current data and analytics capabilities.

Figure 3: Measuring up: Data leaders versus data laggards



Investing in Insight

The realization that data has become a competitive asset is driving substantial investment in this area. A majority of insurance companies (81 percent) intend to increase spending across a wide range of areas related to data and analytics, including risk and performance, portfolio optimization and order management. One investment director interviewed for this report revealed how his company — a major international insurer — is comprehensively upgrading its IT infrastructure, simply to keep pace with the demands of a multi-asset, multi-region business model.

More generally, IT investment needs to support the industry's best growth opportunities. Scott Anderson explains that his company is increasing spending on benchmarks and performance and risk analysis because those facets are adding value (see below). He is not alone. Flexible tools that will grow with the business are the second highest data and analytics investment priority among insurance executives in our survey.

American Family Insurance Sees Value for Money in Custom Benchmarks

Custom benchmarks are already an area where insurers believe they do well, with 74 percent of survey respondents calling them a strength for their companies. Nevertheless, benchmarks also represent one of the leading destinations for spending on investment data and analytics within the industry, with 68 percent expecting to increase their investment in this area.

This suggests that leading insurers are not plugging a weakness but looking to improve a tool that they are already finding very useful. The experience of American Family Insurance is a case in point. Scott Anderson, director of Performance and Risk, Investments, at American Family Insurance, considers benchmarking as one of the key ways in which the company uses investment data to add value.

In recent years, AFI has outsourced significantly more of its asset management. This has been "the driving force" for greater use of investment data by the company, according to Anderson. In most cases, AFI takes well-established benchmarks and combines them in specific ways that reflect what the company should expect from a given strategy or asset manager.

On the allocation side, Anderson thinks that customized benchmarks are a better way of measuring strategic success than traditional ones. For example, for fixed income investments, customized benchmarks have helped the company to improve its performance across its fixed income investments by indicating ways to optimize its allocations.

Comparing benchmarks customized to a specific mandate and manager data allows AFI to see that, due to market changes, a given manager had gone away from mandated behavior in order to try to gain back income quickly. This way the company can ensure that its money is invested as mandated. "In performance management, you are always trying to untangle skill and luck," says Anderson. "Detailed data lets us track managers over time and decide if an outcome is down to the manager or the strategy."

For Anderson, the benefits are clear. "For a customized mandate, our gains are many multiples of the cost of data."

As they invest in new technologies, insurers have to decide how to update their legacy systems. It's not a simple undertaking. In a survey conducted at the Insurance Accounting & Systems Association annual conference in June 2013, 67 percent of respondents called aging legacy systems a "prevailing hindrance" and 38 percent said that their systems were completely outdated and poorly integrated. Sachin Shah, a partner in financial services and IT at Bain & Company, explains the challenge: "Each insurance company has very bespoke systems and, as advances in the business have taken place, they have added new systems and gotten into a real mess."

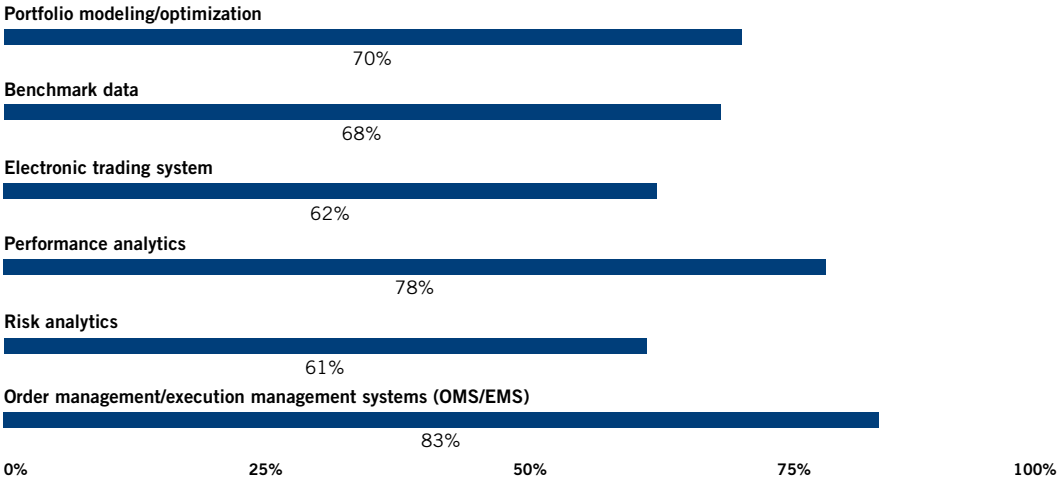
One way to simplify this patchwork of systems and databases will be to build data warehouses that make investment information easier to collect, access and analyze. These technologies can be transformative provided they are deployed as part of a coherent data strategy.

Think Smarter, Act Faster

Integration is a key issue, but there's also a need for tools that can help insurers act on their data-driven insights much faster. For those directly trading in a range of asset classes, this has major implications for their front-office operations. In our survey, insurance executives are the least positive of any sector about their companies' ability to optimize electronic trading strategies (only 15 percent are very confident in this area).

These issues explain why insurance companies are also spending more on decision-support tools for their investment operations. In our survey, four-fifths (83 percent) plan to invest in order and execution management systems, 78 percent in investment performance analytics, and 70 percent in portfolio management and optimization systems (see Figure 4). If properly used, each of these tools can help portfolio managers act faster on new investment insights and opportunities.

Figure 4: Over the next three years, in which of the following types of technology or data do you expect the level of investment your institution makes to increase? (Insurance respondents only)



Source: State Street 2013 Data and Analytics Survey conducted by the Economist Intelligence Unit

The Five Building Blocks of the Data-Driven Business

1. Improve risk tools with multi-asset class capabilities: Increasingly, risk solutions must provide a holistic view of risk across multi-asset portfolios as well as real-time insights into trade positions.

2. Develop solutions to manage regulation in multiple jurisdictions: Insurers need systems that incorporate compliance rules into investment, risk and trading platforms, plus reporting tools that support a complex and growing array of regulatory requirements.

3. Integrate data to extract insight from multiple data sources: Insurance firms need to invest in enterprise data warehouses and better data governance to integrate data currently trapped in a patchwork of legacy systems.

4. Accelerate investment decisions: In a fast-changing environment, the ability to act rapidly on investment strategies and insights is a key consideration for the overall IT architecture. Front-office tools also need to support the alternative asset classes.

5. Develop a scalable data architecture that will grow with the business: Insurance firms need flexible systems that can adapt as investment goals and strategies evolve, and new regulatory requirements emerge.

Conclusion: Optimizing the Investment Engine

The insurance industry runs on twin engines: underwriting and investment. Both sides of the business have faced challenges in recent years, but insurers' investment operations have been particularly constrained.

Insurers increasingly view data and analytics as the key to accelerating the investment side of their business. Our survey results show that they are already ramping up spending on new tools that will enable them to analyze risk and make better decisions across their investment portfolios. At the same time, they are introducing more flexible regulatory tools to handle compliance demands in multiple jurisdictions. If they get their data strategies right, these new tools will help improve efficiency and ultimately drive up their investment returns.

As our research indicates, leading insurers are already gaining a tangible competitive advantage from their data and analytics. The industry's approach to the challenges outlined in this report is still evolving, but one thing is clear. Data-driven insights will be key to mastering the emerging investment model.

Contact Information

If you have questions regarding State Street's solutions and capabilities please e-mail contactssgx@statestreet.com.

STATE STREET.

State Street Corporation
State Street Financial Center
One Lincoln Street
Boston, Massachusetts 02111–2900
+1 617 786 3000
www.statestreet.com

CORP-0919 13-20539-1213