

WHITE PAPER Hedge Funds Catch the Outsourcing Wave

In the fast paced world of hedge funds, managers face a myriad of new trading and operational challenges. There is increased pressure from investors and regulators for more transparency. Competition for investors continues to heat up. Investment products are becoming increasingly complex, and new markets are creating greater investment risk. Managers are struggling to maintain high and consistent performance results. Traders have shifted their focus into complex derivatives and non-traditional assets which require multiple prime broker and counterparty relationships. Operational pressure continues to mount as the middle and back-offices are forced to process and account for these investment products and relationships.

Managers are now at a crossroads, and are faced with a major decision: *either to build comprehensive infrastructure or to outsource their middle- and back-office operations and technology.*

Background

Today there are many outsourcing services to choose from and numerous providers of these services whether Application Services Providers (“ASP”) or Business Process Outsourcing solutions (“BPO”). Simply speaking, an ASP solution involves remotely accessing a software application that is fully-hosted in an external data center and maintained by the ASP provider. A BPO solution involves the utilization of third-party resources to perform repetitive, non-mission critical tasks, thereby removing these processes from the day-to-day responsibility of full-time resources. In most cases, BPO providers operate in offshore jurisdictions and offer services at significantly reduced rates usually during non-business hours relative to the U.S. markets.

The Shift to Outsourcing

Over the past five years, the ASP delivery model has gained broad market acceptance within most industries, primarily due to the availability of newer software and its ability to be deployed over the internet or a virtual private network (“VPN”). The hedge fund industry, on the other hand, has clearly been a late adopter of the outsourcing concept, most likely due its penchant for privacy. In recent years however, numerous factors have shifted the industry mindset and have created an outsourcing trend amongst hedge fund managers to implement various ASP and BPO solutions. The most significant of these factors include: the availability of newer technology; the rapid growth in the number of hedge funds; the increased complexity of investment products; and the broadened investment in emerging markets. As a consequence, hedge fund managers

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have been forced to improve infrastructure, while at the same time minimizing the associated costs in order to achieve greater net performance. The early hedge funds that have recognized this trend are already experiencing increased business efficiencies, significant cost savings, and reduced operational risk while still maintaining the required operational control.

In response to the industry growth and to the changing investment climate, a growing number of software vendors are targeting the hedge fund marketplace with their products and services. Many of these software vendors are new companies offering pure Internet-based solutions for hedge fund managers. However, the traditional hedge fund software providers are also getting into the ASP arena by investing in product upgrades and providing new product versions capable of being deployed in a hosted model.

Both new and traditional hedge fund software vendors clearly recognize the advantages of an ASP offering and have intentionally moved hedge fund managers in this direction. From a vendor perspective, an ASP delivery model not only facilitates the sales process and reduces internal support and implementation costs, but also, commits the hedge fund to a longer-term contract. Typically, there is a huge price disparity between a lower-cost ASP option and an expensive on-site deployment. Most legacy software vendors have completely abandoned the license fee model in lieu of an annual fee or subscription model. The annual fee model is typically structured as a three-year term thereby increasing the recurring cash flow of the vendor. As the ASP trend amongst software vendors continues, hedge fund managers will benefit by having access to comprehensive products and significantly reduced costs.

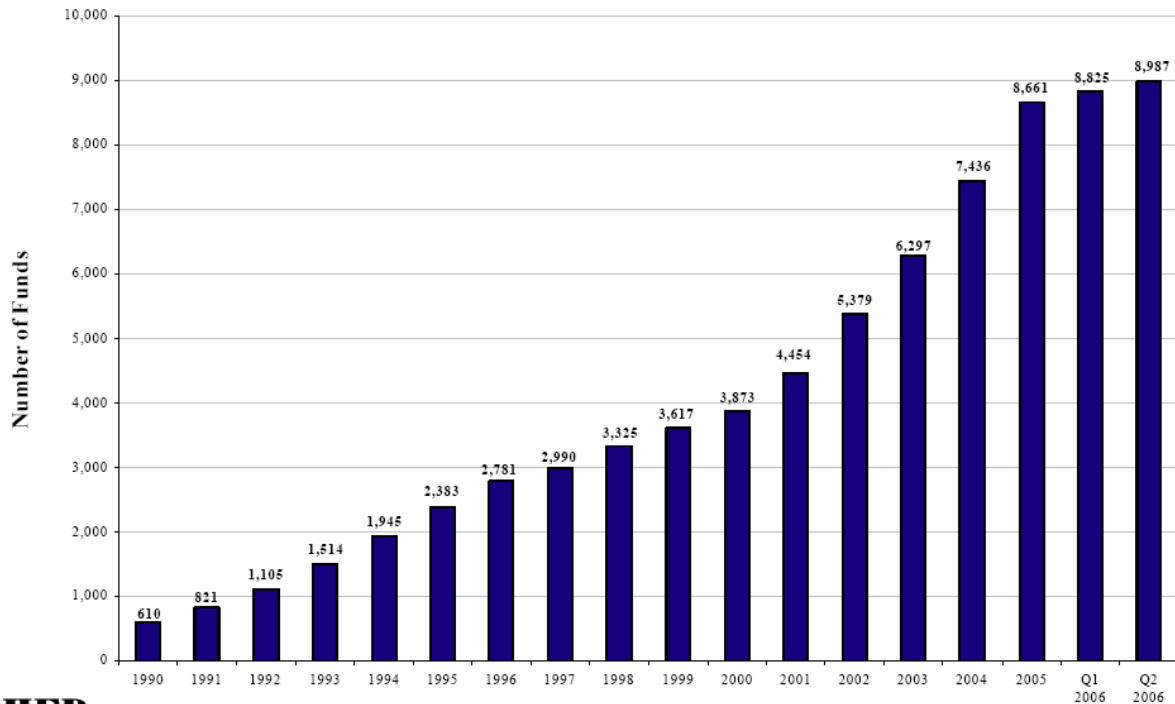
In addition to newer technology, the recent growth in the total number of hedge funds has generated a huge demand for outsourcing services. Since 2001, the total number of hedge funds has increased from approximately 4,500 to almost 9,000 as of June 30 2006¹. The increased competition has forced hedge fund managers to adopt more complex investment strategies in an effort to achieve greater performance.

These investment strategies typically include over-the-counter products and emerging markets, both of which require comprehensive infrastructure and IT support. At the same time, infrastructure costs have skyrocketed in recent years creating a cost barrier for most hedge funds. As a result, hedge fund managers have responded by trading their privacy concerns for more cost effective outsourcing solutions.

¹ Hedge Fund Research Inc.

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Estimated Number of Hedge Funds 1990 – Q2 2006



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From an economic perspective, ASP customers typically pay a monthly or quarterly subscription fee for direct usage of the software as opposed to a costly upfront licensing fee and on-going annual maintenance charge. The ASP fee provides for licensing, support, and maintenance, and typically includes bundled IT services such as hardware and disaster recovery. The ASP solution enables fund managers to utilize world class software applications at a fraction of the cost with no requirement of internal support or IT resources. The ease and timeliness of an ASP implementation relative to on-site deployment also provide significant cost savings, and is especially compelling for start-up managers with tight budgets and short implementation timeframes.

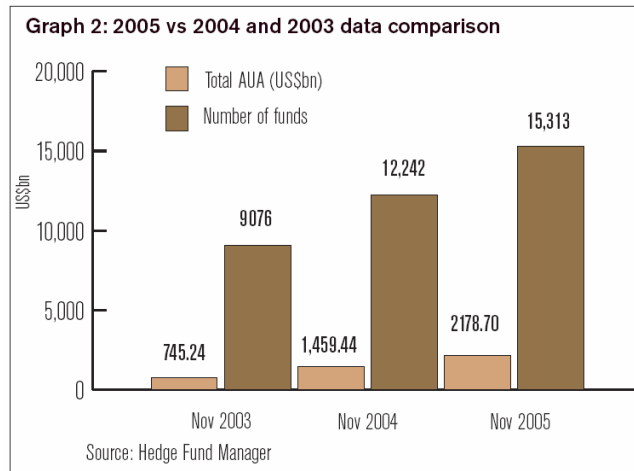
Both the number of hedge funds and the total assets under management have continued to experience tremendous growth in the past five years. Total hedge fund assets surpassed \$1.34 trillion dollars in the third quarter of 2006², which in large part can be attributed to institutional investors³ such as pension funds and fund of funds.

² Hedge Fund Research Inc.

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The institutional hedge fund investors, faced with a plethora of choice among hedge fund managers, have adopted stricter investment guidelines in recent years. These tougher guidelines have forced hedge fund managers to demonstrate their ability to effectively manage risk, provide accurate and auditable net asset value calculations, and to provide the required level of investor reporting and transparency. Those fund managers interested in attracting institutional and fund of funds investors are faced with the decision to either build technology infrastructure or utilize an ASP or BPO solution. Many hedge funds have solved this problem by utilizing a fund administrator for a combination of outsourced technology and middle- and back-office services.



The major growth in assets under administration over the past three years, particularly amongst the largest providers, is indicative of this movement toward outsourcing. According to Hedge Fund Manager, the total assets under administration for both hedge fund and fund of hedge funds has increased from \$745 million in 2003 to more than \$2.1 trillion by Q4 2005. Much of this growth can be attributed to the ten largest fund administrators, who account for nearly 75% of all assets under administration. The large service providers typically offer both middle- and back-office BPO services as well as traditional fund administration. A BPO service requires an administrator to maintain comprehensive infrastructure which creates a barrier to entry for the small- to mid-sized administrators. And hence, the significant growth amongst the largest service providers is largely credited to the increased demand for daily middle- and back-office services.

3 Global institutional demand for hedge funds will triple by 2010, increasing from \$360 billion currently to more than \$1 trillion, representing an increase to nearly 25% of all institutions, up from 15% today, a more than 60% increase. "Institutional Demand for Hedge Funds 2: A Global Perspective," The Bank of New York and Casey, Quirk & Associates LLC, October 2006.

4 AUA differs from AUM as Hedge Fund Research industry statistics do not include fund of hedge funds.

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Table 3: Percentage growth among 10 largest administrators based on AUA

Rank	Company	AUA (US\$bn)		Growth (%)
		Nov 04	Nov 05	
1	SS&C Fund Services	26.00	70.00	169
2	Investors Bank & Trust	58.00	148.00	155
3	BISYS Alternative Investment Services	92.90	168.00	81
4	Fortis Prime Fund Solutions	132.00	198.00	50
5	GlobeOp	67.00	98.76	47
6	CITCO Fund Services	200.00	285.00	43
7	HSBC's Alternative Fund Services	134.20	185.89	39
8	Goldman Sachs	78.00	107.00	37
9	UBS Fund Services	73.00	100.00	37
10	IFS, a State Street company	130.00	160.00	23

Source: Hedge Fund Manager

In summary, the huge growth in the number of hedge funds has created an intense competitive environment which has forced managers to minimize costs and to invest in non-traditional products and markets in an effort to maximize performance. The resulting operational challenges coupled with increasing regulatory and institutional investor pressures have created the need for world-class infrastructure and tight operational control. In response, many hedge fund managers have chosen to implement an outsourcing strategy which has fueled the tremendous growth in both ASP and BPO investment.

The Advent of Outsourcing

Despite all the pressures that have pushed hedge fund managers toward outsourcing alternatives, the ASP model does create a win-win situation for both the fund and their investors. The ongoing ASP fees are considered a cost of doing business, similar to fund administration fees and are typically expensed to the fund, whereas direct infrastructure costs are typically borne by the hedge fund's management company. Although hedge fund investors are forced to pay the ASP fees, they are better serviced with regard to risk and reporting. These investors may also experience increased returns by investing in funds with world class technology infrastructure which would otherwise be too cost prohibitive for most funds.

The ASP solution also enables fund managers to avoid the increasing cost of building IT infrastructure and internal support services. The on-going maintenance of comprehensive software applications including upgrades and testing, database administration, daily back-ups, and high availability disaster recovery plans continues to be cost prohibitive in most cases. In an ASP offering, these services are typically included in a

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full-service offering. In addition, hedge funds can usually negotiate reduced start-up and implementation fees given the ability of the ASP provider to leverage repetitive processes for hardware configuration, software installation, data conversion, interfaces, and reporting.

The ASP and BPO solutions also address the staffing issue facing today's hedge funds. Staffing has become an extremely challenging exercise within the hedge fund industry particularly in the operations and back-office areas. Competition for qualified people is intense and has driven up total compensation costs to exorbitant levels for middle- and back-office personnel. Experienced operations staff and fund accountants have taken full advantage of this knowledge gap causing significant turnover, rising compensation packages, and heavy recruiting costs for fund managers. By leveraging a BPO provider, hedge funds may contract specialized teams in offshore markets such as India and Russia to perform repetitive middle-and back-office processes at significantly reduced rates, thus alleviating the need to hire expensive full-time staff. Moreover, an offshore team adds operational efficiency by leveraging time zone differences to expedite certain processes such as a daily cash and position reconciliation.

The ASP solution also provides an extremely flexible, built-in growth strategy for a hedge fund manager, for example a start-up firm that needs to be up and running in a very short timeframe. As hedge funds grow, their needs become more complex and eventually may result in moving from single- to multi-strategy or from single- to multiple-prime broker situations. These events would typically require significant investment in technology and an extended implementation timeframe. Alternatively, many ASP solutions are modular which means that access to specific functionality may be controlled by the service provider. Therefore, as the needs of a manager change over time, the ASP provider can change the configuration of the solution to accommodate a client's changing business requirements, usually within a very short timeframe and at minimal cost.

Conversely, if an ASP solution no longer meets the needs of a hedge fund manager, it is far easier to change to a new technology solution. In the past, the huge up-front cost to purchase, implement, and support enterprise-wide software applications made it nearly impossible to change systems. As a result, many hedge funds who invested in older technology are utilizing incomplete or sub-optimal systems to run their day-to-day operations.

The Outsourcing Players

There are many providers of ASP and BPO solutions in the hedge fund marketplace from prime brokers to internet-based software companies. Technology-based consulting firms continue to gain market share by providing outsourced networking, product hosting, managed services, and disaster recovery solutions. Software companies have also kept pace by either upgrading their legacy applications or developing new products in an effort to provide web-based or ASP delivery options. Within the services community however, the overall number of outsourcing providers has been shrinking in recent years. The trend amongst hedge

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fund service providers is to “own the relationship” or to be a “one-stop provider” for fund managers, which has resulted in a flurry of acquisition activity. Prime brokerage firms have been acquiring fund administrators, technology companies, and even hedge funds in an effort to cross-sell services and to create competitive advantages. Fund administrators have been acquiring software vendors and building offshore infrastructure in an effort to provide more cost efficient BPO services. In many cases, these offshore teams have been acquired in order to obtain local resources and to establish short-term credibility.

Fund administrators have been the primary beneficiary of the hedge fund outsourcing trend as evidenced by the huge increase in assets under administration. Some of the largest fund administrators including such as CITCO, IFS, and GlobeOp owe much of their growth to their bundled BPO and software ASP services. In most cases, the top tier administrators combine traditional fund administration with infrastructure and middle- and back-office services. Hedge fund managers who require these bundled services have little choice but to use a larger administrator with the appropriate staff and infrastructure necessary to provide a comprehensive service offering. Typical BPO services including daily cash management, collateral management, flash P&L reporting, risk reporting, and cash and position reconciliation are offered for an additional basis point charge. Some administrators also include software ASP solutions to their customers as part of their BPO offering. CITCO, for example, provides larger hedge fund clients with direct access to their Aexeo product, which they acquired from Tudor Investments. Aexeo provides portfolio management and accounting infrastructure to hedge fund managers thereby eliminating the need for these managers to acquire their own in-house solutions. From the administrator perspective, an ASP offering provides significant benefit by streamlining operations, improving data integrity, and minimizing client turnover.

The downside of these ASP solutions is that they are only available to direct clients of the administrator. Moreover, the ASP and BPO solutions are typically only available to the largest or most preferred customers. From a cost perspective, these services are also very expensive, adding as much as 10 – 20 bps for daily BPO and software ASP services in addition to the month-end NAV processing and shareholder services. The daily BPO service also leads to a loss of independence, since the administrator is both preparing and reviewing the funds books and records. Despite these shortcomings however, more and more hedge fund managers are willing to pay for these services in response to the competitive pressures, and fund administrators are directly cashing in on this trend.

With regard to the ASP model, prime brokers have been providing remote access software directly to their customers for many years. Two of the leading prime brokers, Morgan Stanley and Goldman Sachs, can attribute much of their success to their proprietary technology offerings. By providing technology in the areas of trading and execution, portfolio and risk management, and real-time profit and loss reporting, clients quickly became dependent on these systems making it very difficult to change or add additional prime brokerage relationships. As a downside, customers who utilize these applications are effectively held captive and forced to hold their assets at a single prime broker thereby limiting their ability to obtain more

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effective or competitive services. Furthermore, these ASP offerings are only available to direct customers of the bank and do not meet the needs of the larger, more complex funds who do require multiple prime broker relationships to accommodate their global strategies.

In recognition of these shortcomings, Credit Suisse has introduced the first multi-prime technology solution within the prime brokerage industry. Earlier this year, Credit Suisse announced a strategic alliance with Paladyne Systems to provide an integrated front- to back-office technology solution to their clients in a fully hosted ASP model. By incorporating the Paladyne product suite into its prime services offering, Credit Suisse has built an independent, comprehensive technology offering to accommodate both start-up funds as well as large, multi-strategy institutions.

Paladyne is one of many new software companies who provide fully-hosted ASP solutions to hedge fund managers and industry service providers. Other specialty software vendors such as Swapswire, Wall Street Office, and T-Zero have also introduced pure internet based solutions in recent years. Imagine Software is considered the pioneer within the hedge fund community by offering its risk management software exclusively in an ASP model. The industry-wide acceptance of Imagine was a key contributor to breaking down the privacy barriers within hedge funds by maintaining client data within an external data center.

Many providers of BPO services have also evolved over the past few years, especially in the area of IT outsourcing. Firms such as RFA and Eze Castle Integration now provide outsourced networking and disaster recovery services to hundreds of hedge funds worldwide. In the area of middle- and back-office outsourcing, a number of offshore companies have evolved with a comprehensive BPO service targeted specifically to U.S.-based hedge funds. Companies such as Viteos Fund Services, a fund administrator and operational outsourcing service provider to the hedge fund community, is taking advantage of a truly global delivery model and combining it with real-time cutting edge technology and 24x7 operations. These BPO-only firms market themselves as being independent from the official books and records, in contrast to the fund administrators.

Where the Industry is Headed

As the hedge fund industry continues its rapid growth, the increasing cost, competitive, and regulatory pressures will push more and more managers toward the various outsourcing solutions. The acquisition frenzy will continue amongst service providers as new and existing companies attempt to capitalize on this outsourcing trend. The consolidation within fund administration will further apply downward pressure on service fees forcing many of the smaller niche players out of the marketplace. As competition amongst service providers grows, hedge fund managers will benefit from improved technology offerings and an overall reduction in service related fees. Ultimately, the hedge fund investor will benefit by investing in hedge fund managers with comprehensive ASP infrastructure and more efficient operational processes, resulting in a reduction in overall risk, improved investor reporting, and maybe better performance.

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The PALADYNE suite includes the following modules:

- ▶ **Paladyne Portfolio Master™** – provides electronic trading, order management and allocation, portfolio management, real-time P&L, and strategy-based performance tracking.
- ▶ **Paladyne Analytics Master™** – provides portfolio analytics, data aggregation, and custom reporting tools.
- ▶ **Paladyne Security Master™** – provides a centralized terms and conditions repository and distribution engine with intra-day updates, corporate action alerts, OTC setup tools, document warehousing, and a daily operations console.
- ▶ **Paladyne Price Master™** – provides automated collection, storage, and analysis of prices and market data from any third-party sources.
- ▶ **Paladyne Client Master™** – provides complete client relationship management including website integration and reporting.
- ▶ **Advent Geneva®** – provides complete portfolio accounting solution including general ledger reporting, performance measurement, and portfolio reporting as part of Paladyne's hosted solution.

About Paladyne Systems®

Paladyne Systems (www.paladyne.com), a Broadridge Company, is a leading provider of next generation investment management solutions. Paladyne offers its integrated front-, middle- and back-office platform, known as the Paladyne Suite™, to hedge funds, asset managers, fund administrators and prime brokers. The modular Paladyne Suite™ includes order management, portfolio management, reference data management, data warehouse and custom reporting and reconciliation, and is complemented by the Paladyne Network™, an integrated network of leading 3rd party software and market data firms. The solution can be delivered onsite or via Paladyne's industry-leading application service provider solution, Paladyne ASP™. Paladyne was established in 2005 and now serves over 150 clients worldwide. The firm has approximately 160 employees, and is headquartered in New York, with regional offices in New Jersey, London, Russia and Hong Kong.



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