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Citi Prime Finance

Hedge Fund 3.0

A Flexible Operating Model for Building, Managing or Launching a State-of-the-Art Firm

A Prime Finance Business Advisory Services Publication

The last few years have been a period of intense innovation for service providers focused on the hedge fund industry. New delivery models are emerging that offer hedge fund managers the potential to transform their approach to managing their people, delivering their processes and deploying their technology. Adopting these innovations will allow managers to keep in place strong controls, but realize greater efficiencies, cost savings and more operating leverage. The result will be flexible organizations able to focus more exclusively on their investment process, marketing and investor relations without having to over-invest in their non-core functions.

Introduction

Hedge Fund 3.0 is an approach built around using targeted outsourcing experts to achieve efficiencies in a manager's organization, processes and technology. Citi Prime Finance's Hedge Fund Maturity Model lays "what" characterizes best of breed managers at each stage of their development from start-ups to the most mature franchise firms. Hedge Fund 3.0 expands on that work and shows managers "how" they can most optimally achieve those best practices. The benefits gained from this approach will allow managers to:

- Free up resources to focus on the core investment aspects of their business
- Reduce and restructure their cost base, adjusting their fixed versus variable mix of expenses
- Scale back the day-to-day management burden of running a professional organization

The reason we view this as a paradigm shift in approach is that there are now a new set of specialty providers focused on the hedge fund industry with sufficient understanding of the complexities and requirements of this audience to warrant rethinking a firm's delivery model.

It took time for these specialty providers to evolve to maturity. The hedge fund industry has changed dramatically in recent years, moving from a prime broker-driven service model able to handle simple strategies to an infrastructure heavy internalized model required to handle complex trading portfolios and extensive industry and regulatory demands.

Hedge Fund 3.0 offers managers an opportunity to maintain their controls at a level equal to those they've built internally, but with a significantly smaller team and lighter weight technology model. To understand just how powerful this new approach can be, it is important to understand how the hedge fund industry delivery model has evolved up until this point in time.

Hedge Fund 1.0: Equity Hedge Organizations Supported By Single Prime Brokers

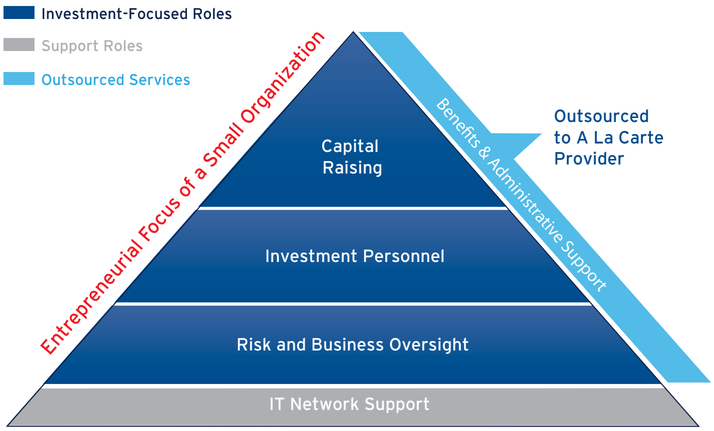
From the 1970s through to the mid-1990s, the hedge fund industry was a niche market. Compared to today's 7,500 funds and AUM of $2.0 trillion, HFR notes that in 1996 there were fewer than 2,400 hedge funds spread across a limited number of managers (excluding fund of funds) and total assets of just over $250 billion. Five years later, not much had changed. There were still less than 3,400 funds and it had taken all that time for the industry's AUM to double and top the $500 billion threshold.

Throughout this period, managers were predominantly focused on equity-related hedge strategies. These were the years that the classic prime brokerage model emerged. By the late 1990s, leading prime brokers were providing their hedge fund clients trading, portfolio management and reporting platforms.

Hedge funds of the period were able to make do with small teams and little infrastructure as their prime brokers took care of the majority of their trade-related activity and a la carte providers handled benefits and people administration. These organizations had a high ratio of investment-focused personnel compared to support personnel, allowing them to operate with the entrepreneurial focus of a small organization. This is illustrated in Chart 1.

The model changed dramatically though in the early and mid-2000s.

CHART 1: HEDGE FUND 1.0



Source: Citi Prime Finance

Hedge Fund 2.0: Multi-Asset Organizations with Proprietary Platforms & Teams

Hedge fund investment strategies started to expand in the early 2000s, moving away from the industry's original equity focus to include a substantial number of more specialized arbitrage, event driven, macro and credit related strategies. According to HFR, equity hedge strategies fell from 56% of the industry's total AUM in 2000 to only 36% of assets by 2007. Total assets quadrupled in this period, rising from $491 billion to $1.9 trillion. In the years since 2007, the shift has continued with AUM surpassing its previous peak, but equity hedge strategies falling to only 27% of AUM in 2011. Several important changes occurred in line with this shift away from equity strategies.

Hedge fund portfolios became more multi-asset, global and spread across a number of prime brokers. As a result, the hedge fund manager could no longer rely on a single prime broker to see their trades, positions and balances. They needed to look across multiple organizations. This resulted in a wave of investment spending in the hedge fund industry.

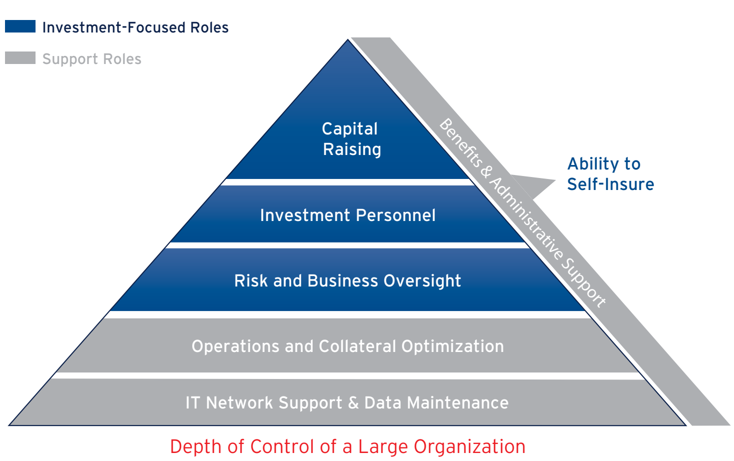
Managers needed to be able to track or "shadow" their trades, positions and balances across their set of prime brokers. To do so, they hired their own operational teams and built or bought their own trade or execution management and portfolio management platforms. To support these platforms, they built proprietary data centers and hired permanent IT development and support resources.

Because each prime broker now only offered a partial view of the hedge fund's exposures, managers' hired risk specialists and built or bought risk management or measurement platforms to aggregate their exposures. Because so many of their positions were now illiquid, many managers hired analysts to perform independent pricing and valuations to ensure that their risk models had relevant marks. Because their assets and positions were split across multiple counterparties, they hired additional specialists to optimize their financing and collateral use and oftentimes, built or bought additional systems to help them track this collateral use. These new capabilities required the hedge fund to capture and analyze large amounts of data. IT teams expanded to support these efforts and many leading hedge funds invested in building their own data warehouse and reporting tools.

As the functions being handled internally within the fund and its infrastructure grew, broader expertise and more day-to-day management of resources were required. This swelled the organization even more; prompted managers to internalize roles focused on people and benefits-related services and encouraged firms to alter their benefits approach by creating a partially-funded or fully-funded self-insured pool. As the hedge fund began to expand its foot print to additional regions, the need for all these roles and infrastructure could be multiplied many times over.

By the global financial crisis in 2008, most of the industry's leading hedge funds had relatively large support teams in operations, IT and human resources, and substantial amounts of infrastructure in place allowing them to both realize their investment strategy and achieve their desired depth of controls and oversight of their portfolio. The trade-off, however, was that the ratio between the investment team and support team skewed significantly away from the entrepreneurial focus of the Hedge Fund 1.0 model. This is illustrated in Chart 2.

CHART 2: HEDGE FUND 2.0



Source: Citi Prime Finance

Changes realized in the Hedge Fund 2.0 phase created a high fixed cost base for most organizations which was primarily charged back to the hedge funds' management companies as compared to their underlying fund or funds. This high fixed cost base was an issue for many managers in the period immediately after the 2008 financial crisis as AUM levels in the industry fell sharply, but the hedge funds could not easily scale back their support infrastructure.

Hedge Fund 3.0: Investment-Focused Organizations Supported by Select Expert Partners

Investments made by pioneer hedge funds at the outset of the Hedge Fund 2.0 cycle laid the foundation for the expert outsourced services helping to transform a manager's options today.

There were few vendor systems available to meet hedge fund needs in the early-to-mid 2000s. Most systems available for both the buy-side and the sell-side were single asset -- either equity or fixed income or derivatives focused. To meet the needs of their multi-asset portfolios, many pioneer hedge funds hired developers to build proprietary platforms. To help defray the cost of these platforms, many sought to commercialize their technology over time, selling their platform to hedge fund administrators or software vendors.

Since managers were now splitting their portfolio out across multiple prime brokers, the fund administrator became the point where the total portfolio was re-aggregated. These service providers used the scale of their own operations to "industrialize" the platforms they adapted from the hedge fund pioneers and build a service model around their enhanced capabilities.

Specialized outsourcing offerings began to emerge where the fund administrator began to take on operational processing responsibility for their hedge fund clients. **This was the first building block of the Hedge Fund 3.0 model.**

Fund administrators who had purchased platforms from pioneer hedge funds now began to introduce middle office outsourcing services. To forego losing market share, traditional fund administrators upgraded their own platforms to follow suit. Middle office outsourcing options were soon followed by collateral management for OTC derivatives outsourcing and then most recently by cash and treasury management outsourcing.

These outsourcers recognize hedge funds' need to maintain control over their trades and portfolios. Most providers offer the manager tools that allow them to monitor and model their activity (often in real-time), but without having the operational responsibility of processing trades and reconciling portfolios. This shifts the burden of operational activities from the hedge fund to the provider. Moreover, since the outsourcer charges the hedge fund a fee for performing this service, most managers can now shift their processing costs from a variable to a fixed expense, qualifying these costs to be charged back to the fund level rather than to the management company under most fund arrangements.

Recent industry outsourcing deals such as Citi Securities and Fund Services' agreement to take on processing responsibility for GLG Man and BNY Mellon's agreement to take over middle office processing for Bridgewater illustrate the sophistication of these "operational" outsourcing capabilities as some of the largest hedge funds in the world can now step out of having internal resources manage their trades and portfolio and instead rely on their outsourcing partner to handle these non-core investment functions on their behalf.

Many smaller firms and start-up organizations are choosing to forego the build-out of a middle office and operational capability altogether and move directly to this outsourced model, paying for their outsourced processing on either a unit cost or basis point cost model that reflects the operational load of the processes being provided.

The second building block of the Hedge Fund 3.0 approach is streamlining and smart-sourcing the people aspect of the hedge funds' organization.

In the GLG Man and Bridgewater deals, the outsourced providers "lifted out" the processing teams from these hedge funds. The teams that the hedge funds had assembled remained intact, but they would no longer be employed by GLG Man or by Bridgewater, they would now be employed by their outsourcers and dedicated to the hedge fund's account. These arrangements significantly improve the ratio of support to investment personnel in the organization by moving them off the hedge fund's books while at the same time allowing the organization to retain the expertise of the people. Many in the industry are thus calling this approach "co-sourcing". This is likely to be a model more large hedge funds explore in the coming period.

Smaller organizations would not have enough staff to require this facet of business process outsourcing, but there are other people innovations emerging that allow these managers (or larger organizations that have just realized a lift-out of personnel), to reduce the cost of their full-time internal staff by "smart-sourcing" the benefits component of their total compensation package. This is important because the majority of these managers do not have the scale of large organizations to partially-fund or fully-fund a self-insured pool. They must thus rely on standard coverage being offered by insurance providers. The proportional cost of these benefits as a percent of an employee's total compensation is significantly higher for these small firms as the hedge funds (like many other small businesses) do not have the scale to negotiate favorable coverage rates on their own.

With benefits being a significant and growing part of employee compensation there have emerged a number of solutions to increase the purchasing power of the small firm, and increase the level of human resources outsourcing available.

One solution to achieve these goals is a co-employment model provided by Professional Employees Organization (PEO) firms who "co-employ" the employees of the hedge fund and effectively 'pool' them with other firms in order to increase purchasing power for core benefits. The employees are listed under the tax identification of the PEO firm who handles all the payroll, expense management and benefits administration of the employees. The PEO providers work on a unit cost basis with set fees for each individual employee and the cost benefit is favorable until the firm reaches around 50 employees.

At this point a second solution becomes affordable from specialty benefits providers that offer the 'pooling' of healthcare benefits with other hedge fund firms. This allows managers to take advantage of the highly desirable demographics of their employees. These special hedge fund coverage pools offer "Cadillac" plans that address the high demands of the typical hedge fund employee, but spread the cost of that plan out across a broad number of firms.

The final building block of Hedge Fund 3.0 is the emergence of off-premises services and the leveraging of cloud technologies to reduce IT costs.

The days of hedge funds building out proprietary data centers and manning those centers with dedicated IT teams are most likely near an end as improvements in bandwidth and the emergence of a specialized breed of managed service providers are now giving managers an option to have a 'hosted" infrastructure.

These specialized providers understand the unique needs of the hedge fund space in terms of both speed and security. Rather than using the traditional "cloud" approach where the hedge fund's data would be spread out across vast server farms like those offered by Amazon or Google, these managed service providers offer their hedge fund clients a "virtual private cloud" where they have a dedicated set of servers that house their information exclusively.

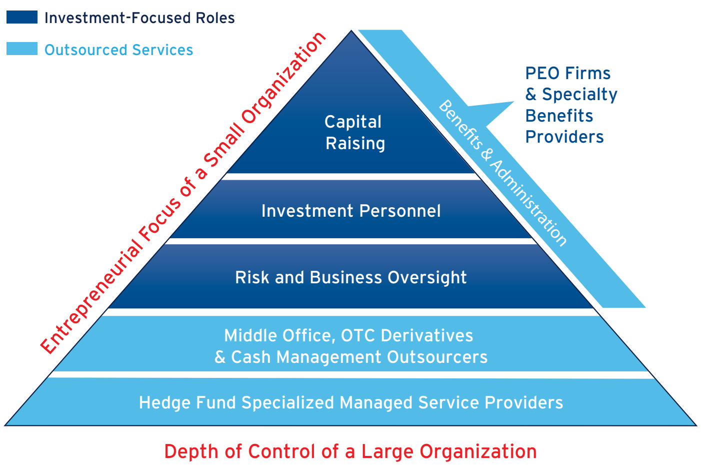
By offering this "infrastructure-as-a-service", the providers remove the burden on the hedge fund from having to purchase and maintain their own equipment. Supporting the infrastructure changes from a "time and materials" billing model to a fixed monthly fee. Scaling the infrastructure to add new capacity or extend disaster recovery capabilities becomes as easy as phoning the managed service provider and adjusting the scope of the contract.

Moreover, the hedge fund can have their managed service provider load their software onto their hosted infrastructure or facilitate the hedge fund using those servers to access software directly from the vendor's hosted location in a "software-as-a-service" approach. This additionally reduces the need for dedicated IT support around these platforms.

Another flavor of off-premises services is the provision of knowledge process outsourcing (KPO). Leading KPO providers allow hedge funds to outsource basic data analysis and information gathering to support select functions such as risk measurement and "basic" investment research. Specialized teams provide many of the same capabilities as junior analysts but at a reduced cost and typically from centers that allow 24 x 7 access. Moreover, these services are typically provided "on demand" so that the manager can scale up or down their activity based on their level of market conviction or exposure.

When all three building blocks of the Hedge Fund 3.0 model are considered together, there is a profound impact on the organization as illustrated in Chart 3. As shown, the specialized outsourced service providers highlighted in this section take on many of the responsibilities that the hedge fund itself had handled in the Hedge Fund 2.0 model, but do so in such a coordinated way that the manager can maintain the depth of their controls with far smaller teams. This helps move the organization back toward the entrepreneurial roots laid down in the Hedge Fund 1.0 model.

CHART 3: HEDGE FUND 3.0



Source: Citi Prime Finance

Capturing the Benefits of Hedge Fund 3.0

The most important aspect of the Hedge Fund 3.0 model is the ability to be flexible in its application and capture its benefits whether a hedge fund is just starting up, is looking to support a growing asset base or is operating at the most advanced franchise level.

New funds launching in the current environment can use the full suite of these offerings to speed their time to market, limit their capital expenditure and position themselves as having institutional controls much earlier in their development. These managers can stay focused exclusively on their investment process and allow expert partners to handle their non-core investment functions from the outset of their existence.

Hedge funds with established infrastructure and resources can use the Hedge Fund 3.0 model to reduce costs at the same time as building new capabilities. These firms can supplement their existing approach and think strategically about their use of outsourced partners. These managers will want to look for certain "trigger events" that offer them an opportunity to incorporate Hedge Fund 3.0 benefits into their existing delivery framework.

Examples of common trigger events include needing to expand into larger office space, replacing end-of-life equipment, upgrading their disaster recovery and business continuity plans, opening a satellite office in a new location, moving from single currency to multi-currency operations, launching a new investment strategy that extends into new asset classes or investment products, adding OTC or listed derivatives into the portfolio or launching new analytics that require real-time data replication.

Each of these instances would allow the hedge fund manager to rethink their existing people, processes and technology for a facet of their business. Adding aspects of Hedge Fund 3.0 for new situations allow for a hybrid approach that can shift more gradually over time.

There are also some managers that may want to make a more foundational decision in applying Hedge Fund 3.0 principles. These organizations have likely reached a "tipping point" where the benefits to be gained by shifting to a new delivery model begin to outweigh the opportunity cost of undergoing a large-scale migration and re-engineering project.

Organizations at this tipping point have several common characteristics:

- The ratio between support personnel and investment professionals has increased significantly since the inception of the firm
- The cost of support functions not directly related to raising or managing capital has become excessive and cannot scale in line with changes in the firm's overall AUM
- The firm's proprietary system architecture is becoming overly complicated, requiring large-scale investment to maintain and there is excessive key man risk around the firm's development resources
- The manager is looking to merge with another organization and will need to think about combining its support capabilities
- The manager is looking to expand into a completely new investment area (i.e., alternative mutual funds) and would need to add new capabilities and resources to handle these products.

Conclusion

As the hedge fund industry has matured, so too has the set of service providers supporting these managers.

Business process outsourcing firms have grown out of the hedge fund administrator business and created an platform able to handle complex multi-asset portfolios, derivatives and international portfolios, all of which make them viable alternatives to hedge funds building their own teams and platforms to perform middle office, OTC processing and cash management functions.

Industry specific benefits providers are offering both PEO co-employment models and tailored Cadillac benefits plans which both lower the cost and reduce the administration burden hedge funds carry for their internal employees. The human resource management function now has a unique set of sourcing partners who offset the need for internal capabilities.

New technology managed service providers are offering infrastructure-as-a-service and creating more flexible fixed pricing arrangements that make it viable for hedge funds to have their own virtual private clouds. Off-premises outsourcing of knowledge based processes offer an alternative to building teams of junior resources and offer hedge funds more 24 x 7 support models.

Together these expert outsourcing and service provider firms provide a flexible operating model for hedge funds looking to build, manage or launch a state-of-the-art firm and offer an opportunity for hedge funds from start-ups to mature organizations to better manage their fixed versus variable cost basis.

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