

**An Abacus Group White Paper**



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# **Trending into the Cloud**

## **An Overview for Hedge Fund Managers**

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**There** is a lot of buzz about the "Cloud" and how it will change the way we utilize technology. The common belief is that the Cloud will make us more effective, better communicators, more educated and better connected -- all while saving money.

The truth is the Cloud is an over-used and amorphous term with subjective meanings to those who speak about it. Our lives are changing as a result of technology, but not that dramatically.

When looking at financial services technology, it is important to understand that products and services are continually being created to improve how we manage, lend, custody, account and administer assets. However, the path to change in financial services is traditionally the tortoise in the race to the finish line. We all still have significant fiduciary responsibilities to our clients, employers, regulators and counterparties. These commitments are extremely critical to our businesses; and recently have been subject to scrutiny around the controls by which they are managed.

There is an increasing demand to improve how we store, secure and process information. Cloud-based technologies will greatly help financial services firms manage and grow their businesses. However, there will be stringent demands on all new technologies to protect the processes and information we deem critical in our business -- **most** important will be to protect information and data, while at the same time allowing for transparency when required.

The financial services market is seeing a shift away from traditional on-site IT infrastructure to cloud-based IT Services. For the purpose of this white-paper, we describe cloud-based services as those IT services and products that are delivered to funds remotely, as opposed to being located physically on-site at the firm's offices. There are several impetuses moving investment managers towards cloud-based technology delivery. The primary drivers are: Economics, Speed of Deployment, Ease of Management, Improved Security, Resource Optimization, Regulation and Transparency.

## **Economics**

Historically the IT costs to start a new hedge fund were very high. Portfolio Managers and Traders have very high requirements and expectations for IT services. Typically, funds require zero down-time, insist on aggressive SLA's and demand high-touch service. To meet these demands, IT service providers implement expensive hardware, build redundancy through-out the network, and overstaff their teams to manage the equipment and users, ensuring expectations are met. Under this model, the benchmark to deploy an on-site IT solution would cost an average-sized fund several hundred thousand dollars, with larger firm's start-ups running into the millions.

Now, add in the cost to build-out a communications/data room in a fund's office -- which alone could cost as much as the IT build-out. The cost per square foot of office space in cities such as New York, London, Boston and San Francisco is expensive. Further, the additional costs of air conditioning,



power, security systems, and all the other set-ups/modifications to implement the on-site IT infrastructure makes setting up an on-site solution a very expensive proposition. Lastly, once the start-up phase is completed, a fund would then be faced with the comparable on-going costs to keep everything running, as well as adding, replacing and upgrading the IT equipment as needs demand.

Last decade, these costs were often absorbed by a fund's investors via soft-dollar arrangements. As the market has changed and soft-dollar's have become limited, the costs to set-up and maintain on-site infrastructure is absorbed directly and wholly by the General Partners of the fund.

In the past three years, the hedge fund space has experienced a number of trials and tribulations with respect to the market, performance and capital raising. Now that things have begun to normalize, hedge funds are looking to run their business differently. Fund Managers are looking to get more from their service providers as well as better technology at a lower price. Fund managers are viewing cloud-based IT solutions as a means to eliminate the large Capital Expense (CAPEX) dollars they are forced to incur every 2-3 years as their IT providers require them to "upgrade" and buy new equipment.

The typical cloud-based model does not require up-front expenditures for hardware or software. Most often, IT providers will lease these items to the fund, or in other cases the IT provider will own the hardware outright and rent slices of IT infrastructure to the fund manager. Moving IT costs from being primarily CAPEX costs, which vary greatly from year-to-year, to Operating Expenses (OPEX), offers fund managers more predictable and less variable costs over time.

## **Speed of Deployment**

Starting and running a hedge fund has historically proven to be challenging when planning and forecasting for growth. As is commonly said by hedge fund managers, "We realistically don't know how many people we will employ or the amount of assets we will be managing 12 months from now." As fund managers plan for the future, they have to set themselves up for expected success, but cannot overlook the downside if markets work against them. Historically, fund managers would have to invest in large infrastructures up-front if they had premonitions of growing quickly and adding new strategies. With the cloud-based model, fund managers can deploy additional technology resources on the fly, without having to pay for any additional hardware. If a fund manager would like to deploy additional technology, such as an order management system and/or a portfolio management system; or the fund manager would like to add additional computing power and/or databases for their quantitative strategies, they can do so in a number of hours with cloud-based solutions. Further, as they add these additional resources, there is no requirement for them to purchase any new equipment, as they are merely taking slices of their cloud-provider's infrastructure.

The primary difference between the traditional on-site IT model and the cloud-based model is with regards to the ownership and location of the hardware/software. In a traditional on-site IT set-up, the fund owns all of the equipment and it resides on their premises. If the fund were to require more resources, then they would have to procure more hardware and software, which would cost capital and time to manufacture, deliver and implement. With the cloud-based model, the hardware infrastructure and software is owned by the IT provider and resides in their data center. When a fund requires more resources, such as servers, processors, memory or storage, the IT provider simply allocates the additional resources. The process is instantaneous and the fund manager is not required to outlay any capital to procure new equipment.

## **Security**

In recent years, security has moved to the forefront of concerns for fund managers and their investors. The catalysts for security concerns is the increased emphasis on investor information and the fund's ability to ensure that all personal information is protected and has multiple levels of security to ensure that the protection will not be breached. Historically, most breaches have occurred as the result of erroneous placement or theft of physical media such as back-up tapes. Further, most funds cannot ensure their on-site infrastructure complies with tight security requirements, when it is sitting in their office, where there is little supervision of who enters or exits the premises.

With cloud-based solutions, the infrastructure most often sits in data centers that have multiple levels and types of security in order to access the cage or cabinet where the fund's equipment resides. Further, it will be important for funds to ensure that any data center utilized by a cloud-based provider is compliant with current and appropriate SAS 70 certifications. SAS 70 is an industry specifications monitored by the AICPA to ensure that any certified provider will have met and continues to meet specifications to ensure the protection of data and quality of service.

## **Resource Optimization**

Prior to the advent of cloud-based solutions, IT providers would over-provision hardware resources for their hedge fund

There are four Tiers of Data Centers. The attributes of can be summarized as follows:

- **Tier I:** composed of a single path for power and cooling distribution, without redundant components, providing 99.671% availability.
- **Tier II:** composed of a single path for power and cooling distribution, with redundant components, providing 99.741% availability
- **Tier III:** composed of multiple active power and cooling distribution paths, but only one path active, has redundant components, and is concurrently maintainable, providing 99.982% availability
- **Tier IV:** composed of multiple active power and cooling distribution paths, has redundant components, and is fault tolerant, providing 99.995% available.



clients. The purpose of doing so was the result of the high expectations of hedge fund managers. IT providers to hedge funds are challenged in that they are typically only evaluated when there are problems with their IT service. Very rarely do fund managers recognize or acknowledge when their IT services work well. There is a constant expectation for zero issues or disruptions. This dilemma places traditional on-site IT providers in a position where the only means for them to be successful is to over-provision hardware resources to minimize risks and/or service disruptions.

Historically, hedge funds would have on-site redundancies for all services, as well as implement a fully replicated set-up in a separate disaster recovery location. In a typical on-site IT set-up, less than 20% of the deployed resources would be utilized. The 80% of spare hardware resources would be running at all times, consuming power and space, but would only be utilized in the event there was a disruption somewhere in the primary infrastructure. One fund manager said he purchased over one million dollars of hardware over the course of nine years that was deployed, but never used once. "I understand the purpose of spare resources in the event of disruptions; however, the amount of money and power wasted for this redundancy seems irresponsible."

One of the principle selling points of any cloud-based IT solution is that it will optimize hardware resources in a cost efficient manner. The premise of the cloud from inception was to utilize spare processing power and memory from hardware resources that were under-utilized.

With respect to hedge funds, cloud-based solutions provide them with the ability to scale up or scale down their resource requirements. If a fund manager has deployed a risk management system that requires more resources to operate effectively, the fund's cloud-based IT provider can re-provision resources from other applications to accommodate for the increased need around risk management. In the traditional on-site model, the fund manager would have to purchase new servers that would require capital and time.

It will be important for any fund manager to understand how their cloud-based IT provider manages the optimization of hardware resources -- *Most providers will provide optimization charts and visibility into their networks.*



## **Regulation & Transparency**

With the looming regulations, it will be important for fund managers to develop processes to better manage how they store and process information and messages. With cloud-based IT solutions, funds will have more options to implement and more importantly change the parameters around how they back-up and retain their data and messages.

Traditional on-site IT set-ups employ physical devices to back up all data. Funds typically define the parameters of how they would like their data to be backed up. The challenge is that once these parameters are defined it is very costly to change or alter them. With cloud-based IT solutions, all data and messages are typically backed up in one or more different data centers. Further, cloud providers typically incorporate SAN based storage for back-ups; thus providing funds with greater flexibility in regards to how they manage their back-up processes.

In future years, there will be benefits to fund managers who have “look-throughs” into their internal operations. With cloud-based solutions, it is possible for fund managers to possess an IT framework from which they can build upon as they expand their operations. Cloud-based IT providers can provide in depth documentation of how funds have their IT configured and managed with specific call-outs on topics that investors are requiring of funds they invest in. Such IT topics as Security, High Availability/Disaster Recovery, and Message/Data archiving are particularly relevant within the current due diligence process investors go through before making an investment.

It will be important for fund managers to consider the regulatory/compliance requirements they will be subject to when working with cloud providers. As cited prior, in a cloud-based solution the fund’s information and data will reside on equipment owned by the cloud IT service provider. Currently, a fund’s information will also reside with other service providers such as the fund’s Prime Broker and Fund Administrator. It should be noted, that most of these other service providers are subject to AICPA regulation in the form of SAS 70 certification. Optimally, a fund will rely on their cloud-based IT provided to achieve these certifications utilizing a reputable third party auditing firm to perform on-going evaluations.

## **Summary**

As investment managers evaluate new technologies, such as cloud-based IT services, it will be important for them to determine their business objectives in utilizing these services. Cloud technology will provide managers a means to scale their businesses in a more expeditious manner, as well as provide them cost savings versus a traditional on-site IT build-out. However, investment managers must understand what it is required in moving their technology into the Cloud, as well as the required documentation and communication which will be required of their clients and potentially



regulators. Further, managers need to confirm that any third party whom they outsource the management and/or storage of their applications and data are appropriately qualified to do as such, and ensure all stakeholders that the data is protected.

The trend towards Cloud based IT services is real; and a significant number of hedge funds are moving part of their infrastructure, or all of it, into the Cloud. In future years, the industry will see increased development of new software products and services which will only be delivered via the Cloud or ASP means. As managers think through the future growth plans for their funds, it will be important to look and better understand what this technology shift will mean to their business in the future.

### **About The Abacus Group**

The Abacus Group is an IT Solutions firm focused on helping hedge funds and private equity funds deploy and manage hosted IT solutions. Our objective is to provide investment managers and technology executives with solutions to improve their IT service experience. Abacus has developed a scalable, redundant and highly available IT platform to allow investment managers to run all of their technology as a service. The days of purchasing new hardware every few years are over. Abacus manages mirrored data centers throughout the US and provides cost effective and efficient solutions to firms whom require redundancy, high availability and disaster recovery. Firms connect to their IT applications and data through high speed circuits with minimal onsite equipment. Abacus is headquartered in San Francisco, CA, with offices in New York, NY and Charlotte, NC.