

WHITE PAPER The Next Generation Prime Broker

As the hedge fund industry continues its rapid growth and assets pour in at record levels amid rising institutional allocations, industry dynamics are changing significantly. Recent high-profile blow-ups have led to calls for increased operational scrutiny and transparency of investment processes. Managers have been forced to upgrade their operations and accounting infrastructures amidst intense cost pressures. Competition for investors has moved managers away from traditional investments into emerging markets and over-the-counter products which has created even more of a need for tight operational control and comprehensive infrastructure.

As these market dynamics change, prime brokers are realizing they have to adapt their business models if they want to sustain the high level of profitability their parent investment banks have grown accustomed to. However, as cost pressures and infrastructure demands intensify, more and more managers are choosing to maintain multiple prime broker relationships to get best access, competitive pricing, and, to a lesser extent, non-traditional services such as fund administration and comprehensive technology.

While large hedge funds (typically, over \$1 billion in AUM) employ as many as ten prime brokers, the smaller hedge funds are mostly boxed into one prime broker often as a result of technology constraints. However, as we predicted in our first research paper¹ – there is a significant trend toward multiple prime brokers and we estimate that this trend will continue until the industry average reaches three prime brokers per manager.

In response to these and other industry trends, prime brokers are expanding their service offerings and in particular have been forced to reinvent themselves. In this research paper we explore the impact of this multi-prime broker trend on the marketplace, the resulting demand for technology platforms and operations to support multi-primers, and the changing business model of prime brokers. We fast-forward to the Next Generation Prime Broker that readily partners with its competitors and independent service providers to stay in-sync with the new forces shaping the hedge fund industry.

Background

As reported in numerous industry publications, there has been an exponential growth in the total number of hedge funds and hedge fund assets. According to the HFR Industry Report, the industry had grown to approximately \$1.74 trillion in managed assets by the end of the second quarter compared with only \$40 billion in 1990. The second quarter of 2007 saw inflows of \$58.7 billion, only slightly behind the record \$60 billion in the first quarter. Industry analysts expect this rising tide of assets to continue².

¹ *The Need for Multi-Prime Brokers, Paladyne Systems Research Paper, June 2006.*

² *Hedge Fund Research Industry Report Second Quarter 2007.*

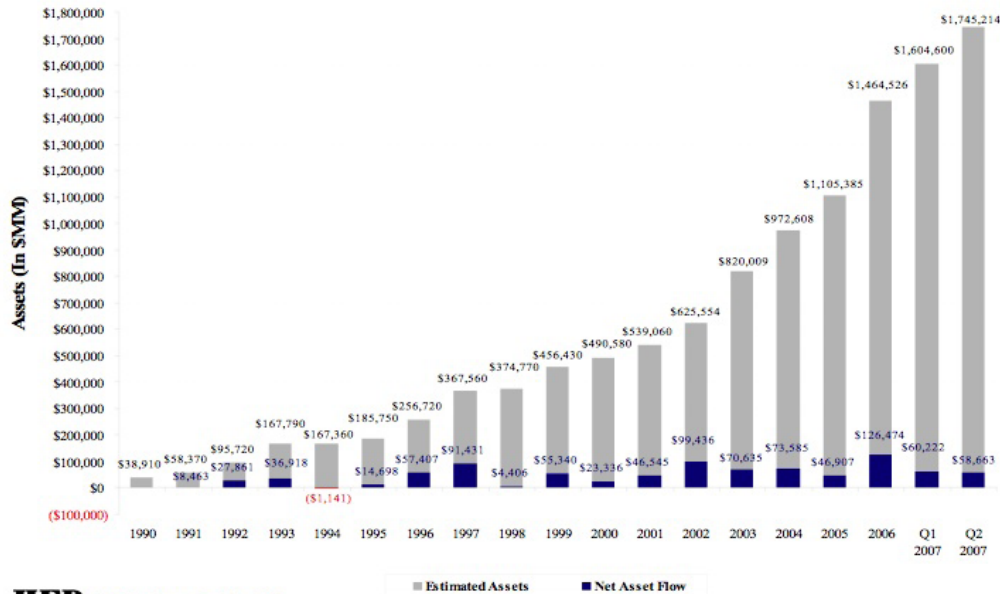
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Following the lead of the world's top pension plans, institutional investors are pouring assets into hedge funds in the quest for absolute returns that are uncorrelated to the broad equities and bond markets. For the first time, pension plans and endowments are investing more in hedge funds than affluent individuals and family offices, according to Greenwich Associates³. Direct investment by institutional investors, including corporate and public pension funds, now represents 25% of the assets of hedge funds with more than \$1 billion in assets under management, which is up from 22% in 2006 and 20% in 2005. At the same time, investments from high net worth individuals and family offices dropped from 25% to 21%, according to the study released in June. According to the Greenwich Associates study, more and more endowments, foundations and pensions are investing in single managers and are even seeding new entrants.

Institutional investment in single-manager hedge funds will continue to accelerate and lead to more comprehensive operational due diligence standards. Following the demise of Amaranth, which saw roughly \$6 billion of assets get wiped out in two weeks, investors have adopted far stricter due diligence guidelines. Some pensions have even doubled their track record requirements to at least a two-to-three year period. The need for tight operational control is now clearly under the spot light, especially for the more complex, multi-strategy funds.

Estimated Growth of Assets / Net Asset Flow Hedge Fund Industry 1990 – Q2 2007



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³ Greenwich Associates Study in conjunction with Global Custodian, June 2007.

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As institutions increase their hedge fund allocations, their due diligence is focused on streamlined and integrated front-to-back systems, robust portfolio accounting, independent valuations, and enhanced risk analysis and reference data management. They require better and more frequent reporting and detailed net asset value calculations. Those hedge funds that fail to comply with these demands are being passed over by the large institutions.

As a result, today's manager must choose between spending hefty sums on infrastructure and technology or increasing their reliance on 3rd-party service providers such as fund administrators for middle- and back-office support and prime brokers for technology and infrastructure. The increased demands on these 3rd-parties have created intensely competitive environments, especially amongst prime brokers. Managers are shopping around for prime brokers with expanded services offerings and competitive cost structures which has further accelerated the trend toward multiple prime broker relationships.

Current Prime Brokerage Environment

Over the past ten years, prime brokerage has evolved into a major revenue stream within the top investment banks. Given the enormous profit levels coupled with the increasing demand for prime brokerage services, many mid-sized financial institutions have penetrated the market and have built sizeable prime brokerage businesses. As a result of these new entrants, the market share of the ten largest prime brokers has eased to about 70% from 80% a decade ago. We expect a further distribution of market share as well as tighter margins despite efforts by the larger investment banks to do whatever it takes to reverse the trend.

Historically, the industry has been dominated by two to three top players – Goldman Sachs, Morgan Stanley, and to a lesser extent Bear Stearns. The success of the larger two prime brokers can be mostly attributed to their forward-thinking full-service offerings and sustained investment over many years. The market leadership of Goldman Sachs and Morgan Stanley, thus far, is due in large part to their integrated full-service offering which includes a large pool of investment products, access to large balance sheets and strong credit ratings, capital introduction, trade ideas and research, and comprehensive technology platforms and support. Goldman Sachs and Morgan Stanley were also the first to include fund administration as part of their client service offering.

In order to compete with these market leaders, prime brokers have been forced to upgrade their technology and expand their service offerings in many cases through acquisition. In the past two years, prime brokers have spent and continue to spend large amounts on the acquisition of both fund administrators and hedge funds in an effort to augment their service offerings:

- ▶ **Fund Administration** – Investment banks are increasingly bundling administration services with their traditional prime brokerage services to increase revenue per customer. Most of the big players now offer a fund administration service either directly or through a strategic partnership. Recent examples of this

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trend are Citi's acquisition of BYSIS, State Street's purchase of IFS and Investors Bank and Trust, Bear Stearns' strategic investment in start-up administrator Quintillion, and Credit Suisse's partnership and investment in Viteos Capital Market Services. Banks continue to shop around for fund administrators pushing acquisition premiums to exorbitant levels.

- ▶ **Hedge Fund Deals** – Banks have also been acquiring hedge funds which began back in 2005 with J.P. Morgan's acquisition of Highbridge Capital and Paloma Capital. This trend has gained momentum since last year with Citi's acquisition for Old Lane, Morgan Stanley's deal with Avenue Capital Management, Lansdowne Partners and FrontPoint Partners, Credit Suisse's investment in Osprey, and Lehman Brothers interest in D.E. Shaw. Such transactions provide banks with investment expertise, operational resources and technology infrastructure, all of which may eventually be used to service their hedge fund clients. J.P. Morgan, for example, built its Hedge Fund Services Group around Paloma's middle- and back-office infrastructure.

Banks are also making unprecedented investments in their technology infrastructure to meet the growing demands of their hedge fund customers. However, most banks are still investing in the single prime model. Leading prime brokers provide comprehensive technology that is fairly advanced but is not ideally geared to a front-to-back multi-prime broker model. Prime brokers must recognize the multi-prime trend and explore new approaches for building technology platforms in support of the changing marketplace. Today, it remains quite cumbersome for a manager to add a second or third prime brokerage relationship especially if there is any dependency on the first prime's technology.

While prime brokers have long talked about an open architecture system that would enable hedge funds to operate with multiple primes, they have failed to make this service accessible. As an attempt to circumvent the limitation of a single prime technology platform, some top-tier prime brokers extend their traditional services to cover "hearsay" reporting—a service whereby the prime broker aggregates external prime broker positions and balances into consolidated reports on behalf of its customer. We do not expect hearsay reporting to last given that it is expensive for the prime broker and more importantly, it exposes a fund's complete portfolio to the aggregating prime broker. We expect the larger hedge funds to increase the demand for hearsay-like services; however, we expect the delivery methodology and technology to change. Going forward, a main competitive differentiator will be in the prime broker's ability to easily enable a client to have multiple prime broker relationships.

Many top-tier prime brokers claim to already have the capability to meet their client demands in all areas, and some do offer an element of multi-prime technology solutions. Still however, only a small number of prime brokers can really claim to be full-service and the question remains whether they do so for each and every client. We can't say with certainty if those prime brokers possessing this ability have enough bandwidth to service all their clients, not only the biggest or most lucrative ones. In truth, prime brokers are trying to adapt to changing market forces, but they are not moving fast enough. There is a significant shortfall in their ability to offer broker-independent technology and related services, and given today's

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reality, few hedge funds will want to work with a single prime broker in the future. Whether the manager is looking for competitive fees, risk mitigation, transparent reporting or just satisfying the demand of institutional investors, the move toward multi-prime brokers is accelerating.

We expect that the average number of prime brokers used by hedge funds to settle around 3 primes and the industry will evolve to easily support this demand. According to a Merrill Lynch report⁴, nearly 35% of funds in excess of \$1 billion in assets have four or more prime brokers, with some funds having as many as a dozen in an attempt to spread their portfolio and negotiate pricing. Smaller funds meanwhile, particularly under \$100 million, are constrained through the technology of their primary broker and the prohibitive operational costs of building their in-house solution and as a result maintain only a single prime relationship. Consultancy Tower Group recently said more brokers are expected to roll out multi-prime technology solutions within the next 18 months, adding: "...firms who have not already done so would be foolish to fall too far behind."⁵ Given the huge number of smaller hedge funds, multi-prime technology platforms seem inevitable.

In the past year, we have seen the multi-prime delivery model emerge. In June 2006, in an industry-breaking move, Paladyne Systems announced a technology partnership with Credit Suisse to offer their hedge funds clients an integrated and independently-hosted (outside of Credit Suisse's infrastructure), front- to- back-

office, multi-prime technology solution enabling fund managers to operate and grow their businesses based on evolving needs without the constraint of a "single-prime" technology platform. Industry analysts deemed this a risky move since it enabled Credit Suisse clients to leverage its technology to add or change prime broker relationships with little to no constraint.

Despite these risks, Credit Suisse continues to expand its multi-prime offering through innovative and comprehensive services that are better aligned with their client demands. In June 2007, Credit Suisse unveiled Advanced PrimeSM, a prime services offering which includes all of the traditional prime brokerage services coupled with a true multi-prime technology platform offered through its Paladyne partnership, and complete middle- and back-office operations support through Viteos Capital Market Services, an Indian provider of administration and outsourcing services. Advanced PrimeSM will incorporate expert consulting and implementation services, process automation and business continuity through these and other strategic relationships with best of breed vendors. We expect other prime brokers to rapidly follow suit.

In order for prime brokers to effectively compete for assets, they will first need to *accept the fact that fund managers now require multiple prime brokerage relationships*. In response, prime brokers will need to augment

⁴ "The Multi-Prime Broker Environment, Overcoming the Challenges and Reaping the Benefits", Merrill Lynch, March 2007.

⁵ "Technology and The Multi Prime Broker Movement", TowerGroup, December 2006.

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their traditional services with complimentary offerings that enable multiple prime broker relationships. These actions will give rise to the *next generation prime broker*.

Increasing Client Demands

While competition amongst prime brokers heats up and margins continue to get squeezed, managers are demanding more and more services from their existing prime brokerage relationships, both in traditional areas as well as expanded multi-prime services. Clearly, prime brokers will have to take concrete steps improve the quality of existing services in combination with expanding their offerings.

With regard to traditional prime brokerage, managers are increasing their demands across a wide range of services including trade execution, settlement and reconciliation; cash and collateral management; leveraged financing; securities lending; and in some cases capital introduction. The need for expanded services in large part has fueled the movement toward multiple prime relationships. More specifically, the demand for the following traditional services has increased significantly:

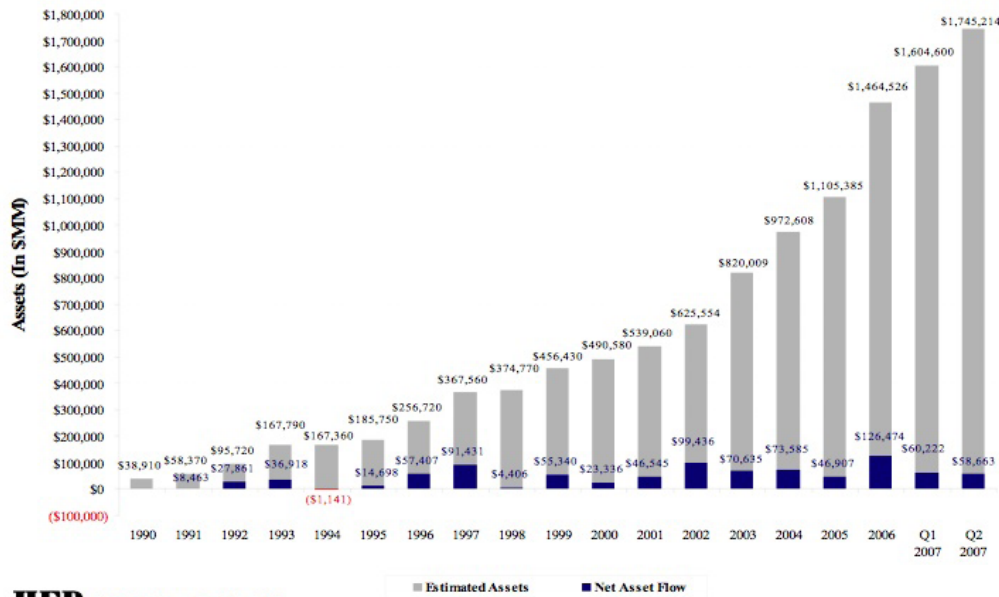
- ▶ **Multi-asset** exploring and trading alternative trading strategies, such as distressed debt and private investments, OTC derivatives and other new synthetics in an effort to boost returns. According to the HFR group⁶, hedge fund managers continue to become more diverse and complex in their trading strategies. In Q2 2007, HFR estimated that less than 30% of all hedge funds assets were traded in a pure equity long/short strategy which has steadily decreased over the past 5 years. Greenwich Associates reports that managers under \$100 million are still focused predominantly on long/short, 77% in 2007 up from 71% in 2006; however, the larger funds have increased their diversification into more complex strategies. Their latest report⁷ found that 40% of hedge funds with more than \$1 billion AUM follow an event-driven strategy this year, up from 36% in 2006, while 29% ran emerging markets strategy (up from 24%) and 20% traded volatility arbitrage (up from 14%). Given the intense competition amongst managers for investor capital, we expect this trend to continue as managers of all sizes explore alternative trading strategies and OTC derivative products to increase returns.

⁶ Hedge Fund Research Industry Report Second Quarter 2007.

⁷ Greenwich Associates, Institutional Money Tops 25% Of Assets For World's Largest Hedge Funds, June 2007.

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The impact of this trend on prime brokers is significant given that managers expect services around these complex strategies, including order execution, settlement, and cross-margining across asset classes.

- ▶ **Alpha Access** - Alpha Access – Hedge funds are increasingly dependent on their prime brokers for new trading ideas, stemming either from the bank’s research groups, private equity groups, or from structured products desks.
- ▶ **Global Coverage** - Fund managers are expanding into emerging markets in search of investment opportunities. As fund managers expand in global markets, their prime brokers must demonstrate an ability to support these markets.
- ▶ **Infrastructure and Technology**- FAs an alternative to building costly technology platforms to exhibit operational control, managers are increasingly relying on prime brokers for bundled front-to-back office technology. Prime brokers have been invested heavily in recent years in an effort to offer such systems to their customers.
- ▶ **Competitive free structures**- In the face of increased due diligence, managers are expected to demonstrate to investors that their prime brokerage rates are competitive. In response, managers have

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added prime relationships for the ability to negotiate and obtain better rates on financing and other services. As a result, prime broker margins are getting squeezed.

- ▶ **Risk mitigation-** Due diligence pressure has also forced managers to consider counterparty risk which in turn has generated a move toward multiple prime broker relationships. By adding a second or third prime broker relationship, managers expect to mitigate counterparty, financing, liquidity and operational risks.

As fund managers continue demanding more of these services, the movement toward multiple prime broker relationships is inevitable. However, as we have discussed, the addition of a second or third prime brokerage relationship introduces significant operations challenges for a hedge fund. In order for prime brokers to stay competitive, they must help clients alleviate some of these new operational challenges. More specifically, managers with multiple prime broker relationships are faced with some of the following issues:

- ▶ **Administrative-** Multiple primes translates to increased counterparty monitoring for the additional accounts and points of contact.
- ▶ **Front-office-** Multiple prime brokers may require managers to utilize multiple execution platforms for direct market access. Since most prime broker execution platforms are single prime offerings, managers will need for supplemental trading applications and order management capability.
- ▶ **Middle-office-** Multiple prime brokers creates the need for aggregated portfolio reporting, accounting, and risk management. This need is most significantly because it requires the manager to consider building infrastructure or outsourcing services to a 3rd party.
- ▶ **Back-office-** Multiple prime brokers requires more complicated trade allocation and reconciliation processes which result in higher error rates and more resource requirements. Managers are again forced to add staff or leverage outsourced service organizations.

Next Generation

We predict that all of the trends identified in this paper will continue and will result in fundamental changes in the way that prime brokers conduct business in the future. We predict that a new prime broker model will evolve which we have summarized in this paper as the next generation prime broker. Specifically, the next generation prime broker will be more of a pure trading partner with its clients and will couple with a complete service offering reflective of the growing sophistication of the industry and the infrastructural requirements needed by today's hedge funds. These brokers will offer technology that is truly broker-neutral and is operated and maintained by an independent provider. The independent provider aspect is critical to insure the privacy of the fund managers. These prime brokers will offer a full set of ancillary services including middle and back office support, fund administration, and consulting, which will be provided by strategic third party specialists. The third-party relationships will be branded or white-labeled by the prime broker and will be transparent to the manager. As such, prime brokers can focus primarily on the trading needs of their clients yet have a full service offering largely independent of the bank.

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We envision the following ancillary services to get coupled with a traditional prime brokerage service offering:

- ▶ **Open and independent technology architecture-** As hedge funds expand their prime broker relationships, they expect the prime brokers to provide them with the necessary technology infrastructure to support multiple relationships and the required aggregated reporting. Accordingly, the brokers must provide independent trading systems and aggregated middle- and back-office accounting, reconciliation, and reporting. These technology platforms must be fully integrated with all of the prime brokers existing technology and must be open to integrate with the technology offerings of any additional prime brokers. Currently, as part of its Advanced Prime initiative, only Credit Suisse through their partnership with Paladyne Systems offers a full front- to- back-office multi-prime brokerage technology platform. Citigroup is a step behind, working with Linedata to offer their solution (which is currently still in beta testing and rollout)⁸. Goldman Sachs is also recognizing this trend and recently announced that its REDIPlus execution platform is now broker neutral.
- ▶ **Independently-hosted technology-** A critical component of the independent technology offering is the delivery model, which must be provided by an independent third party and offered as a full service Application Service Provider, or ASP model. The third-party delivery ensures privacy of positions and trading strategies, which is a key concern for hedge funds. Any multi-prime technology that's not delivered via an outside, independent vendor is risky because a prime broker will have the full picture not only of a fund's positions it holds but also of what's held at the other prime brokers the manager works with. In addition, a technology solution provider within the bank will be difficult to modify and interface with other prime broker technology platforms.
- ▶ **Middle- and back-office outsourcing-** Hedge funds are clearly gravitating toward outsourced mid-to-back office processing as evidenced by the huge growth in fund administrator assets and in the rising demand for third party daily processing and reporting services. Simultaneously, independent business process outsourcing in areas such as daily reconciliation and reference data management is also on the rise. Prime brokers are in a strong position to deliver services such as cash management, daily settlement and reconciliation, collateral management, corporate actions processing, and portfolio reporting since they currently perform them as part of their existing internal processes.

In June 2007, Credit Suisse announced a strategic relationship with Viteos Capital Market Services to offer complete middle- and back-office services as well as fund administration to its clients. Viteos will also perform certain internal prime broker processes which will result in an overall reduction in the banks total

⁸ "Technology and The Multi Prime Broker Movement, Section: Citigroup and Beauchamp Financial Technology", TowerGroup, December 2006.

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operating costs. It was announced that Credit Suisse also took a minority stake in the Indian firm's holding company. Credit Suisse and Viteos have developed two programs which will be deployed simultaneously. Viteos and Credit Suisse will co-brand and co-market a comprehensive outsourced solution for hedge fund middle- and back-office operations.

- ▶ **Fund-administration - independent Navy delivery-** In addition to middle- and back-office outsourcing, hedge funds would like to leverage their prime brokerage for fund administration services. Investment banking firms currently provide this service either to preferred customers or only on assets held at the bank. The privacy issue is paramount since the fund administration side of the business must be kept separate from the prime brokerage side. Goldman Sachs, Morgan Stanley and UBS offer complete fund administration but others are scrambling to assemble or acquire this capability. In order to avoid any potential conflict of interest or privacy issues, we expect to see prime brokers team with existing administrators to offer strategically branded or white-labeled fund administration services.

We expect relationships such as Credit Suisse / Viteos and Bear Stearns / Quintillion to become more of the norm as opposed to primes paying inflated valuations to fully acquire these firms.

- ▶ **Independent business consulting-** Most prime brokerages currently offer consulting services in the areas of staffing, office space, technology systems, vendor selection and service providers. These services are very helpful, however, the maintenance of internal consultant teams is very costly and faces challenges such as constantly educating staff on latest industry developments, technology, software applications, etc. In our view, an independent, third party consultant team will be less costly and will be better equipped to service clients in these areas. We envision the next generation prime broker will maintain one or two strategic consulting partners to assist their clients in all aspects of their business by providing well-informed and independent objective recommendations.

Conclusion

As prime brokers begin to offer expanded services, we expect fund managers to reject the traditional "captive service model" in which prime brokers offer selective services and effectively handcuff their single-prime clients through an inflexible business model. Instead, the next generation of prime brokers will be viewed as trusted partners operating with an open service model that provides flexibility and protects the confidentiality of client positions and trading strategies. The next generation prime broker will provide services through a group of strategic alliance partners in order to maintain true independence and client privacy.

As institutional money continues to move into hedge funds, investor and regulatory pressure will continue to require tighter operational and infrastructure controls, risk management, transparency and streamlined reporting. Hedge funds, in turn, will require more and more assistance from their prime brokers to meet these market demands. We expect managers to consolidate their overall service requirements with one

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leading prime broker while adding additional primes when needed. We expect managers to eventually operate with an average of three prime brokers. Competition will continue to rise which we expect will fuel the next generation model.

We further believe the industry will be forced to collaborate. Prime brokers will need to integrate their respective technology platforms to address the changing requirements of hedge funds. A teamwork approach will result in standardized data communication protocols, which will streamline the industry and will improve services levels across the board. In this vision, we expect relationships between customers and their prime brokers to evolve into true partnerships.

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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