This new blade server Magic Quadrant focuses on a market that is outgrowing that of all other server form factors. Most vendors are now investing in the market, and many Gartner clients are standardizing on this technology for their data center deployments.

WHAT YOU NEED TO KNOW

Blades represent an important stage in the evolution of servers as separate, discrete platforms give way to modular designs and the boundaries between servers, storage and networking become increasingly porous. Due to their modular nature, blades offer compelling operational benefits, such as improved cabling, rapid hardware provisioning, high compute density and increasing management automation. But blades deliver few, if any, application benefits compared with their rack- and tower-based peers, and the market lacks vendor interoperability standards. Blades are not the only choice for modular deployment, but they represent a much greater lock-in effect than regular rack servers impose, and return on investment (ROI) calculations need to be more stringently applied. Users should match their blade needs and investment objectives carefully to vendor portfolios, product life cycles and vendor strategies for modular architectures as a whole.

MAGIC QUADRANT

Market Overview

The blade server market is not new, and is rapidly evolving with a gradual transition toward data center fabrics that will drive the market toward more-porous barriers between compute, storage and networking technology. Blades are not an essential part of this technology convergence, but the modular nature of blades makes them a natural fit for the trend.

Market Definition/Description

A blade server is a modular device that fits, together with other blades (which may not all be servers), into a custom-designed chassis to create a fully functioning system. The chassis provides power and cooling provisioning to all blades, plus various common management functions. Via the back-plane, blades can also provide connectivity from server to server, or from server to storage or the network, but network and storage input/output (I/O) can also be directly routed to the blades. Blade servers can have onboard storage or be completely diskless, with operating system booting done from the storage area network (SAN). Most blade chassis are designed for blades to be vertically mounted, but this is not essential and there are exceptions. Blades can, in theory, have any number of processors from any processor type, although it is normal for blade servers to be low-end devices with no more than four processors. It is normal for blades with higher complements of processors or
storage to be wider, so that two or more chassis slots are consumed. Such blades are sometimes known using terminology like “bricks.” Blade chassis capacity can vary, and may be populated with blades of different types, including nonserver devices like storage devices and network switches or other I/O modules for added connectivity. Most blade chassis are designed to fit within standard 19-inch racks, but some enterprise blade platforms are based on other dimensions. Blades are not the only form of modular server. We see emerging markets for “twin servers” and other ultradense, rack-optimized form factors that also exhibit modular qualities.

The original concept of blade servers was introduced to the market a decade ago by small, specialist companies, such as RLX Technologies and FiberCycle Networks. The target market for this first generation was large Internet data centers, and early demand was driven by the ill-fated dot-com boom. When the service provider market collapsed, mainstream server vendors started to introduce blades for the broader enterprise data center market. The most prevalent applications for blade servers tend to fall into the front-end and midtier of the data center. Front-end applications depend more on fast throughput than on raw processing power, so they may be installed on blade servers with just one or two processors. Blade servers for front-end applications may need just one internal disk, or perhaps two for mirroring. Midtier applications usually require more-powerful blade configurations with more memory and I/O capacity. These larger blade servers can support transaction processing applications or small database applications, and they can be a suitable basis for virtualization hosting. Larger blade servers may require more internal disk space on the blade server, but they are increasingly likely to rely on data stored on a SAN. Early examples of blade-based data center fabrics depended on the ability to boot from a SAN, with the role of onboard storage declining.

The market for hosted virtual desktops (HVDs) is another fast-growing segment where the use of blades is viable. Blade servers may also be clustered to form a high-performance computing (HPC) cluster. Users have frequently regarded blades and server virtualization as alternative methods to gain more-granular resource utilization, but the modern generation of blades is as well-suited to the use of virtualization tools as any other form factor.

Applications that may take advantage of an HPC cluster include scientific and technical applications. Until the advent of the recent recession, the blade server market was growing at 20% compound annual growth rate (CAGR) compared with low single-digit growth for other server form factors. Although growth has slowed, demand for blades remains strong, and blades will comprise an ever-growing proportion of total server sales. However, it must be remembered that blades still represent less than 15% of the total server market today. Because they favor smaller and less-challenging workloads, the majority of blade deployments favor x86 architectures. But vendors like HP, IBM and Sun Microsystems ship non-x86 blades, primarily targeted at Unix users. Blade servers are well-suited as test and development platforms in Unix-based environments. Blade technology can be deployed for even continuous availability workloads. But blade servers are less likely to be installed in production environments for complex applications, such as high-end database serving, data warehousing, ERP and CRM. Although vendors may claim that their high-end blade server models are appropriate for these kinds of

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Figure 1. Magic Quadrant for Blade Servers

<table>
<thead>
<tr>
<th>niche players</th>
<th>visionaries</th>
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<tbody>
<tr>
<td>Bull, SGI, NEC, Sun Microsystems, IBM, HP</td>
<td>Hitachi, Fujitsu, Dell, Cisco, HP, IBM, Sun Microsystems, NEC, Bull, SGI, Verari Systems, Liquid Computing</td>
</tr>
</tbody>
</table>

Source: Gartner (October 2009)
applications, we recommend that customers remain cautious about running their most-demanding applications in blade environments, and demand valid references and proof points.

Due to strong promotion by both IBM and HP, the blade server market is very imbalanced, with 70% of revenue achieved by the two vendors today. But with so much investment in the concept, and with a strong CAGR that will erode the market for other server form factors, the blade server market offers a compelling opportunity for many other vendors – particularly those that focus on more-specialized geographic, verticalized or workload niches.

**Inclusion and Exclusion Criteria**

Blades constitute a segment of the overall server market that is defined by its modular deployment, and not all server vendors invest in blade technology. The main catalysts for inclusion in this Magic Quadrant are active international market presence and sales volume of at least $5 million in 2009. That means obvious inclusion for the two vendors (HP and IBM) that represent the majority of blade shipments worldwide, plus eight vendors that have strong commitment to the market, albeit sometimes in niche deployments, plus two additional vendors (Cisco and Liquid Computing) that are relatively new to this market and, therefore, have a limited track record to date. But Cisco and Liquid Computing’s blade-based strategies are potentially highly disruptive and represent the transition toward fabric-based technology convergence. A small number of blade vendors have been excluded either because their market presence is geographically very narrow (that is, they support just one or two countries) or because they are legacy vendors that mainly address an installed base market where there is little or no new business that we can evaluate.

**Evaluation Criteria**

**Ability to Execute**

Until recently, blades had been regarded as a distinct server form factor that addressed different market needs compared with tower-, rack- and frame-based servers. But all blades, by definition, leverage standard 19-inch rack-based topologies, and with each generation, the distinction between blades and conventional rack-based servers becomes more blurred. So blades become a hybrid solution that exploits the standardization of the 19-inch rack form factor, while imposing proprietary integration within the chassis.

Blade market execution is achieved through one or both of two methods. Large, established vendors with a strong installed base of rack-optimized servers are in a natural position to advocate the use of blades as a mainstream evolution, while smaller vendors are able to leverage the advantages of blades for certain workload requirements where they can excel in a more niche-oriented market. For the larger vendors, blades introduce a new positioning challenge that can impact execution effectiveness, while more niche-oriented vendors must work to evolve their target markets and maintain added value.

**Completeness of Vision**

If we assume that data center infrastructure will become steadily more granular and component-based, then blades are the natural stepping stone to this state. Vendors currently at the leading edge of data center fabrics are typically using blades as the foundation for their work. Blades put an additional onus on the functionality and close integration of server management tools, which favors vendors that are either leaders in this field or that have strong tool integration with partners.

The latest generations of x86, reduced instruction set computer (RISC) and Itanium processors are enabling blades to address more-challenging workloads. This, in turn, puts pressure on the I/O capabilities of blades—be it server-to-server connectivity for increased scaling or storage/network connectivity. Leading-edge vendors will be investing in processor and memory aggregation to address larger and more-complex workloads, with multichassis and even multirack aggregation as the ultimate manifestation. By aggregation, we mean the logical and scalable integration of multiple components, such as CPU and memory.

**Table 1. Ability to Execute Evaluation Criteria**

<table>
<thead>
<tr>
<th>Evaluation Criteria</th>
<th>Weighting</th>
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<tbody>
<tr>
<td>Product/Service</td>
<td>high</td>
</tr>
<tr>
<td>Overall Viability (Business Unit, Financial, Strategy, Organization)</td>
<td>high</td>
</tr>
<tr>
<td>Sales Execution/Pricing</td>
<td>standard</td>
</tr>
<tr>
<td>Market Responsiveness and Track Record</td>
<td>high</td>
</tr>
<tr>
<td>Marketing Execution</td>
<td>standard</td>
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<tr>
<td>Customer Experience</td>
<td>high</td>
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<tr>
<td>Operations</td>
<td>standard</td>
</tr>
<tr>
<td>Source: Gartner (October 2009)</td>
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</tbody>
</table>

**Table 2. Completeness of Vision Evaluation Criteria**

<table>
<thead>
<tr>
<th>Evaluation Criteria</th>
<th>Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market Understanding</td>
<td>high</td>
</tr>
<tr>
<td>Marketing Strategy</td>
<td>standard</td>
</tr>
<tr>
<td>Sales Strategy</td>
<td>standard</td>
</tr>
<tr>
<td>Offering (Product) Strategy</td>
<td>high</td>
</tr>
<tr>
<td>Business Model</td>
<td>standard</td>
</tr>
<tr>
<td>Vertical/Industry Strategy</td>
<td>low</td>
</tr>
<tr>
<td>Innovation</td>
<td>high</td>
</tr>
<tr>
<td>Geographic Strategy</td>
<td>low</td>
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<tr>
<td>Source: Gartner (October 2009)</td>
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</tbody>
</table>
Leaders
With a decade of shipments and product evolution, blade market leaders will need an enduring track record across multiple geographies, vertical markets and workload scenarios. This is a highly polarized market, where two entrenched vendors already command more than 70% of worldwide business by revenue and units. Although we predict organic growth for the market, the polarized nature presents a challenge to other vendors seeking volume.

Challengers
Challengers are likely to be vendors with a strong global presence that are focusing their blade strategies on a broad set of target clients, rather than pure innovation. As the markets for rack optimized servers and blade servers gradually converge, mainstream server vendors with strong natural ability to execute will increasingly target the blade market.

Visionaries
While this is a market that will always attract innovators, the market is stabilizing and maturing rapidly. Visionary vendors in this market will either represent the discontinuous leading edge of the market or they will be large vendors with a plan to drive market success through technology innovation and a narrower product portfolio.

Niche Players
The early pacemakers in the blade server market have all either been acquired or are in decline. But this is a market that addresses specialized “edge” niches of the broader server market well, and this will naturally drive innovation by small vendors that may only address certain geographies, verticalized markets or workload situations. Consequently, this is a Magic Quadrant that will always have a strong complement of niche vendors that drive innovation, but whose small size or narrower geographic focus force them to target their energies.

Vendor Strengths and Cautions

Bull
Bull sells a range of 7U and 9U blade form factors, plus the new bullx platform, which is targeted at HPC and other extreme scaling requirements. While the company’s focus is primarily aimed at the x86 market, Bull also supports Power processors in its Blade Series Enterprise family.

Strengths
- Bull has strong vertical-industry expertise.
- The company is a well-established HPC market contender with a strong presence.
- The company has OEM agreements in emerging markets.
- Bull is committed to technology innovation, especially energy efficiency and cluster management.

Cautions
- A restricted regional presence limits Bull’s potential as a global vendor.

Cisco
Cisco is a nascent blade server vendor, having just entered the market in 2009 via technology gained as a result of its Nuovo acquisition. Cisco’s Unified Computing System (UCS) is highly innovative and is particularly targeted at highly integrated and virtualized enterprise requirements. Although it is new to the market, we believe that Cisco will aggressively drive its blade strategy to increase wallet share in accounts where Cisco already has a strong influence. Cisco has bold ambitions to achieve volume market acceptance, but the company will have to work hard to build alliances with independent software vendors (ISVs), integrators and channel partners to overcome market behavior that is entrenched around just two vendors. To overcome its inexperience and lack of peripheral components in a mature server market, Cisco has chosen to target channel partners that have a history in selling servers.

Strengths
- Cisco is a global powerhouse with presence in most data centers.
- UCS is a differentiated, fabric-based enterprise-class platform with good integration of networking, virtualization, management tools and storage.
- The company has cross-selling opportunities to the extensive Cisco installed base.
- Cisco has strong partnerships with virtualization and management tool vendors, as well as integrators.

Cautions
- Cisco lacks a server market track record and installed base upon which to leverage.
- The company’s strategy is dependent on alliances with management tool vendors and storage vendors to create a complete offering.
- Strategic alliances with key operating system and application vendors are relatively untested in an environment where Cisco is a server vendor.
- Cisco only has an enterprise-class solution with a limited portfolio to date.
Dell
After some years of opportunistically addressing the blade server market, Dell has recruited talented engineers from rival vendors, which culminated in the launch of its latest generation of blade servers in 2007. Dell is also developing collaborative relationships with vendors like Scalent Systems and Egenera. Dell offers Intel Xeon and AMD Opteron blade servers that are well-engineered, enterprise-class platforms that fit well alongside the rest of Dell’s x86 server portfolio, which has seen the company grow its market share steadily through the past 18 months.

Strengths

- Dell has extensive cross-selling opportunities since it is a mainstream, x86 server market leader.
- The company has strong investments in the latest platforms.
- Dell has an aggressive pricing policy.
- Dell has focused innovation in areas like cooling and virtual I/O.

Cautions

- Dell has a limited portfolio that is targeted at enterprise needs.
- Consistent execution is required to dispel the company’s prior history of patchy commitment.

Fujitsu
Fujitsu restructured its global sales and marketing operations in April 2009, which should lead to more-consistent sales execution and product branding for all platforms. The company offers a broad range of blade offerings, including its new high-end PRIMERGY BX900 Dynamic Cube platform and an established marketing and support relationship to OEM Egenera’s blade platforms in Europe, the Middle East and Africa (EMEA).

Strengths

- Fujitsu has a strong portfolio of products.
- The company has good technology innovation, especially in the PRIMERGY BX900 Dynamic Cube server, which will compete with Cisco’s UCS and HP’s BladeSystem Matrix.
- Fujitsu has a vertical and regional market expertise.
- The company has an installed base in many regional markets from which to leverage.

Cautions

- Fujitsu’s new global structure (while welcomed by Gartner) is still young and relatively unproven.
- The company has a limited track record as a volume supplier outside Japan and Western Europe.

Hitachi
Although less-known outside Japan, Hitachi’s BladeSymphony blades are well-established and address a broad set of requirements. Hitachi is a technology innovator, especially in the field of aggregation and virtualization.

Strengths

- Hitachi has a well-proven platform with a strong Japanese installed base.
- The company offers chassis options that address both enterprise and workgroup/departmental/branch requirements.
- Hitachi is committed to technology innovation, particularly in I/O and memory aggregation, as well as hardware-embedded virtualization.

Cautions

- Hitachi’s sales and marketing execution in Western markets is passive and less-proven.
- Hitachi has a limited account presence outside Japan.

HP
Building on the acquisitions of Compaq and RLX Technologies, HP has been a blade market leader throughout this decade. Since the 2006 introduction of its latest blade generation, HP has recaptured market leadership and now sells more blade servers than the rest of the market combined. HP offers a broad range of Intel Xeon, AMD Opteron and Intel Itanium blades around two chassis form factors, plus more-specialized NonStop blades for continuous availability. The new BladeSystem Matrix is a fabric-style offering aimed at high-end enterprise needs where strong integration of compute, network and storage is an asset.

Strengths

- HP is a blade market volume leader in all geographies.
- The company has extensive cross-selling opportunities, as HP is also the leading x86 server vendor.
- HP has a strong track record in management tools.
- HP has chassis options that address data center, workgroup/departmental/branch and continuous availability requirements.
- The company supports x86 and Itanium-based blades.
- HP is committed to blade innovation, particularly around virtual I/O, cooling, infrastructure autoprovisioning, aggregation and the new BladeSystem Matrix.

Cautions
- HP has a complex portfolio of rack and blade servers that requires careful positioning (especially with the new push into extreme scaling workloads with alternative, modular, rack-based technology).

IBM
IBM and Intel entered the blade market in 2002 with a joint collaboration effort that saw IBM target its blade strategy toward enterprise clients, while Intel resold the technology through various hardware partners. Since the original launch of IBM’s blade platform in 2002, the company has extended its portfolio constantly and has rapidly achieved volume market leadership, which has only recently been lost to HP. But IBM still ships more than twice the number of blade servers as its next competitor. IBM is putting new initiatives in place to regain market share, including supply chain enhancements, dedicated sales resources and new channel programs. With five different enclosures, IBM can address a very broad set of requirements that include extreme scaling, direct current (DC) power and Network Equipment-Building System (NEBS) compliance, and yet all IBM blades are interoperable between all five chassis options.

Strengths
- IBM has strong market share in all geographies.
- The company has extensive cross-selling opportunities, as IBM is a mainstream, x86 server market leader.
- IBM has the broadest set of chassis options that address both enterprise and workgroup/departmental/branch requirements, plus more-specialized needs.
- IBM supports x86 and RISC (power)-based blades.
- The company has a strong track record in management tools.
- IBM is committed to blade innovation, particularly around cooling and specialized workloads.

Cautions
- After a sharp reduction in market share during 2007 and 2008, IBM is now refocusing its efforts on recovery, but the initiative is still young and there are not yet enough statistics in place to show that the recent successes of vendors like HP and Dell have been checked.

Liquid Computing
Liquid Computing is a relatively new vendor that is privately funded. The company earns inclusion in this Magic Quadrant through its strong commitment to innovation. Targeted initially at HPC requirements, the LiquidIQ blade platform has developed into a leading-edge, fabric-based solution that integrates compute, network and storage capability in a single, managed platform aimed at enterprise requirements. To extend its reach further, the company is also pursuing collaborative technical and marketing partnerships with established data center vendors.

Strengths
- Liquid Computing has a leading-edge, fabric-based solution.
- Liquid Computing has strong partnership ethics and commitment to standards.
- The company is committed to blade innovation, particularly around virtual I/O, cooling and power.

Cautions
- Liquid Computing has a narrow portfolio geared toward the enterprise market.
- The company has a limited track record with relatively few users in a narrow selection of vertical industries and geographic locations.

NEC
NEC, like other Japanese vendors (such as Fujitsu and Hitachi), frequently lacks recognition in Western markets for the breadth and sophistication of its blade server portfolio and corporate strengths. NEC Express5800 SigmaBlade server and express offerings address a broad range of needs, while the Express chassis can support both Intel Xeon and Itanium processors. NEC is gradually expanding its local sales and marketing focus in both EMEA and North America.

Strengths
- NEC has a strong Japanese installed base.
- The company has chassis options that address both enterprise and workgroup/departmental/branch requirements.
- NEC is committed to technology innovation.

Cautions
- After a sharp reduction in market share during 2007 and 2008, NEC is now focusing its efforts on recovery, but the initiative is still young and there are not yet enough statistics in place to show that the recent successes of vendors like HP and Dell have been checked.
Cautions

- NEC has a limited account presence outside Japan.
- The company’s international sales and support infrastructure is still at a nascent stage for server deployments.

SGI

SGI’s Altix ICE technology primarily addresses HPC market requirements, where SGI has an enviable market track record. Consequently, SGI is able to leverage its installed base (and now that of Rackable Systems, which acquired SGI in early 2009). Although there will be convergence of Rackable and SGI technology, the Altix ICE platform is well-regarded and likely to survive.

Strengths

- SGI is an established HPC leader.
- SGI has new cross-selling opportunities in the Rackable installed base.
- The company is committed to technology innovation.
- Ownership by Rackable Systems should dispel most user fears around SGI’s financial viability.

Cautions

- The convergence of SGI and Rackable technology could cast doubt over platform survival.
- Integration of Rackable and SGI sales and support organizations could create localized quality of service issues.
- SGI’s market presence is mainly limited to HPC and markets with similar workload characteristics.

Sun Microsystems

Sun offers two separate blade families that address a broad range of workload requirements, although component interoperability between them is limited. Since the launch of the 6000 blade family in 2007, Sun has been able to grow its blade market share aggressively. As with any acquisition, the plans by Oracle to purchase Sun create doubts over platform longevity that the new organization must dispel through timely publication of ratified product road maps and sales initiatives.

Strengths

- Sun has a broad range of blade offerings that include Intel Xeon, AMD Opteron, UltraSPARC III and CMT variants.
- The company is able to address specialized blade markets, such as extreme scaling and NEBS compliance.
- Sun is committed to technology innovation, particularly around energy management, InfiniBand support and other I/O enhancements.

Cautions

- The survival prospects for Sun’s blades are good, but market uncertainty will only be addressed through rapid publication of revised road maps once the Oracle acquisition has closed.
- To maintain momentum, the new organization particularly needs to dispel doubts over the strategic roles of UltraSPARC and Solaris (especially the x86 variant).

Verari Systems

After initially establishing itself as an HPC market contender, Verari has expanded its focus to encompass Web-based scale-out applications and complex workloads that would often fall outside the target markets of more-mainstream vendors. Verari is recognized as a technology leader in the current market, able to address a wide range of performance, scaling and connectivity needs through its ability to customize solutions.

Strengths

- Verari is committed to technology innovation, particularly power, cooling, extreme density and container-based solutions.
- The company has strong customization capabilities.

Cautions

- Verari has a relatively small customer base.
- The vendor has a limited track record outside North America.

Vendors Added or Dropped

We review and adjust our inclusion criteria for Magic Quadrants and MarketScopes as markets change. As a result of these adjustments, the mix of vendors in any Magic Quadrant or MarketScope may change over time. A vendor appearing in a Magic Quadrant or MarketScope one year and not the next does not necessarily indicate that we have changed our opinion of that vendor. This may be a reflection of a change in the market and, therefore, changed evaluation criteria, or a change of focus by a vendor.
Evaluation Criteria Definitions

Ability to Execute

Product/Service: Core goods and services offered by the vendor that compete in/serve the defined market. This includes current product/service capabilities, quality, feature sets and skills, whether offered natively or through OEM agreements/partnerships as defined in the market definition and detailed in the subcriteria.

Overall Viability (Business Unit, Financial, Strategy, Organization): Viability includes an assessment of the overall organization’s financial health, the financial and practical success of the business unit, and the likelihood that the individual business unit will continue investing in the product, will continue offering the product and will advance the state of the art within the organization’s portfolio of products.

Sales Execution/Pricing: The vendor’s capabilities in all pre-sales activities and the structure that supports them. This includes deal management, pricing and negotiation, pre-sales support and the overall effectiveness of the sales channel.

Market Responsiveness and Track Record: Ability to respond, change direction, be flexible and achieve competitive success as opportunities develop, competitors act, customer needs evolve and market dynamics change. This criterion also considers the vendor’s history of responsiveness.

Marketing Execution: The clarity, quality, creativity and efficacy of programs designed to deliver the organization’s message to influence the market, promote the brand and business, increase awareness of the products, and establish a positive identification with the product/brand and organization in the minds of buyers. This “mind share” can be driven by a combination of publicity, promotional initiatives, thought leadership, word-of-mouth and sales activities.

Customer Experience: Relationships, products and services/programs that enable clients to be successful with the products evaluated. Specifically, this includes the ways customers receive technical support or account support. This can also include ancillary tools, customer support programs (and the quality thereof), availability of user groups, service-level agreements and so on.

Operations: The ability of the organization to meet its goals and commitments. Factors include the quality of the organizational structure, including skills, experiences, programs, systems and other vehicles that enable the organization to operate effectively and efficiently on an ongoing basis.

Completeness of Vision

Market Understanding: Ability of the vendor to understand buyers’ wants and needs and to translate those into products and services. Vendors that show the highest degree of vision listen to and understand buyers’ wants and needs, and can shape or enhance those with their added vision.

Marketing Strategy: A clear, differentiated set of messages consistently communicated throughout the organization and externalized through the website, advertising, customer programs and positioning statements.

Sales Strategy: The strategy for selling products that uses the appropriate network of direct and indirect sales, marketing, service and communication affiliates that extend the scope and depth of market reach, skills, expertise, technologies, services and the customer base.

Offering (Product) Strategy: The vendor’s approach to product development and delivery that emphasizes differentiation, functionality, methodology and feature sets as they map to current and future requirements.

Business Model: The soundness and logic of the vendor’s underlying business proposition.

Vertical/Industry Strategy: The vendor’s strategy to direct resources, skills and offerings to meet the specific needs of individual market segments, including vertical markets.

Innovation: Direct, related, complementary and synergistic layouts of resources, expertise or capital for investment, consolidation, defensive or pre-emptive purposes.

Geographic Strategy: The vendor’s strategy to direct resources, skills and offerings to meet the specific needs of geographies outside the “home” or native geography, either directly or through partners, channels and subsidiaries as appropriate for that geography and market.