2000 Forecast for the EJB Application Server Market
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Giga Position

Giga estimates the size of the Enterprise JavaBean (EJB) application server market to have been $585 million in 1999. We expect it to balloon to $1.64 billion in 2000 and to continue to grow rapidly, reaching $9 billion by 2003. One consequence of this growth will be the separation of the market into a small number of vendors (perhaps as few as two or three) with both the technology and the sales and support resources reaching a broad audience, together with a number of smaller vendors, each specializing in a particular market niche. Those broad-based vendors will each claim more than 20 percent market share; the remainder will claim less than 10 percent each.

In view of this maturation of the market, it will be a critical survival factor for those vendors unable to move out of this niche category to occupy a niche that is defensible and provides sustainable differentiation. Furthermore, clients buying EJB application servers should buy either from overall market leaders or from vendors that appear likely to remain viable in their niche of choice.

Proof/Notes

Giga has been tracking the application server market for more than two years now, and it has reached a stage where it is possible to size the market with a reasonable degree of concrete data, since so many of the players are publicly traded, and it is possible to assess what share of their revenue comes from their application server business. In considering the application server market, raw revenue numbers, or even license numbers alone, are not necessarily the best guide to understanding the leaders in this market and its future evolution as the EJB component model and associated J2EE standards come to dominate. Application server models that, in many cases, were largely proprietary and/or procedural models rather than today's component-based models, dominated the early application server market.

Beginning in 1998 and through 1999, the market has evolved to favor standards-based approaches, such as servlets and component-based models, predominantly Entity Beans of various flavors. In attempting to measure the relevance of vendors in this component-based future, we have attempted to factor out the portion of their revenues that is attributable to implementations that are not component-based and offer no natural migration path to a component-based approach. In addition, we took into account the fact that some application servers play a dual role, for example, as Web servers, and we have attempted to discount such usage; in some cases, this results in figures that differ significantly from the vendor's claimed revenues or market share, which typically do not make such a distinction. While this process introduces some degree of subjectivity, we believe that it provides a more realistic guide to the future evolution of a market dominated by the EJB standard and a better predictor of the fates of the vendors in that market.

Market Methodology

Research was conducted collaboratively by Mike Gilpin, Teri Palanca and Carl Zetie. The methodology we used to derive these numbers was a combination of raw revenue data, analysis and adjustments, as follows:

- The vendors included were **IBM**, **BEA Systems**, **Oracle**, **iPlanet**, **Sybase**, **SilverStream**, **Allaire**, **Art Technology Group** (ATG), **Persistence**, **Inprise**, **Iona**, **Bluestone**, **Gemstone**, **Secant** and **ObjectSpace**. There are a few other application servers on the market, but they are either open source (hence no revenue), or like **Information Builders**, part of a larger pie and impossible to assess because of the way the product is positioned and sold. All the players included have more than 1 percent share except for Secant and ObjectSpace.

- To be included, the line of business had to be built substantially around an implementation of support for Enterprise JavaBeans today, with a direction to either Java 2 Enterprise Edition or a substantially equivalent set of target standards. Note that in other treatments of the application server market, we have included TP Monitors and Object Transaction Monitors, as well as **Microsoft** DNA/2000, and although we still believe those can be considered application servers, for this analysis, we focused more specifically on the emerging Java-centric category where most client inquiries are focused.

- For those vendors included, we included all the revenue from the application server line of business, both product and service, and we included revenue from products that implement only part of the standard. For example, current users of JRun from Allaire are mostly using Servlets not EJBs, but since the same can be said of a substantial portion of IBM's 1999 revenue, we felt it would be unfair and unrealistic not to include this revenue, since some applications only require servlets and not EJBs for implementation.

- For those readers wishing to break out just *product* revenue, use an average for the group of 75 percent of revenue derived from products, making the 2000 product revenue market size somewhere above $1.2 billion. Note, however, that our definition of service revenue in this context counts mainly services tied directly to the implementation of the application server solution, not including more general systems integration. This is a higher percentage than the 50/50 split that will typically be found in a mature market, and reflects the fact that service revenue trails products, so in a fast-growing market, the ratio of product to service will be higher. Note also that vendors allocate maintenance revenue in different ways, some allocating a portion as product revenue, others allocating all revenue as services.

- In assessing 2000 revenue, we compared the first quarter of 2000 to the fourth quarter of 1999 for a quarter-on-quarter growth rate, which we then applied to the whole year 2000, in most cases. In a couple of cases, we factored in other considerations to make adjustments to these projected growth rates, such as recent or impending acquisitions, or lines of business which are likely to be shed. We also looked at all four quarters of 1999 revenue to do a sanity check on the numbers and spot any seasonal variations, but for most vendors, the growth from the first quarter of 1999 through the first quarter of 2000 has occurred at very consistent rates. There were a few vendors, though, that hit a clear "hockey stick" in about the fourth quarter of 1999, including IBM, BEA Systems, ATG, SilverStream and Bluestone, and we took this into account in making a realistic assessment of their 2000 growth rates.

- We estimated IBM's revenue by comparing it to BEA, based on the number of deals we have seen IBM winning relative to BEA, and on the prices we have seen customers paying in typical deals. We could easily be off on this particular number by plus or minus 20 percent, since IBM does not break out WebSphere revenue for financial reporting. In addition, in 1999, IBM has been seen to discount more aggressively than BEA, which would reduce its revenues.

Vendor Analysis

- The results of our research are tabulated (see Table 1) and summarized graphically (see Figures 1 and 2). For 1999, we estimate this market reached $585 million in total revenue.

- In 1999, the market leaders were BEA Systems with a 32 percent share, IBM with a 16 percent share, and Sybase with a 15 percent share. BEA's early lead was due to a time-to-market advantage with WebLogic, and Sybase's strong early showing was a reflection of the historical strength of the PowerBuilder market in providing a base for conversion to EAS. Note that the relative positions of some of the more established vendors are somewhat skewed as a result of our focusing mainly on revenue from EJB application servers, which discounts pre-EJB revenue from some vendors, notably iPlanet, Allaire, ATG and Iona (see below).

- As noted, some vendors, including Allaire, Iona and iPlanet, are particularly adversely affected by these

market segment definitions. All three have substantial existing lines of business that don't fit this particular definition of an application server, and if we had used a broader definition for 1999, Allaire would show a 13 percent share (including Cold Fusion), Iona would show a 7 percent share (including Orbix) and iPlanet would have shown a 15 percent share of the 1999 market because of pre-EJB NetDynamics and Netscape revenue. Inprise would also show higher numbers from its existing CORBA line of business. However, as explained above, we think our definition is closer to what most buyers now mean when they say they are looking for an application server.
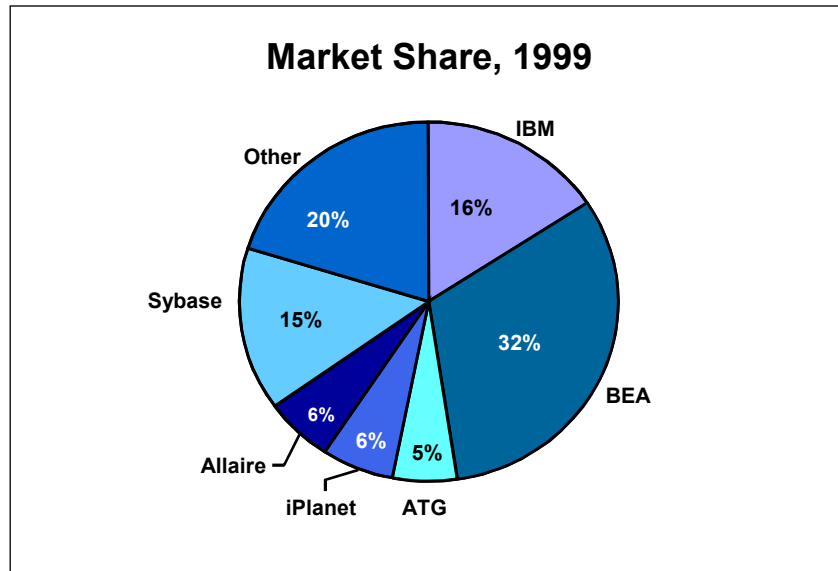
- For 2000, we forecast the market will reach $1.64 billion in revenue, a growth rate year-on-year of 180 percent, bringing this market into the range of the burgeoning market for application integration solutions. This growth rate will not be sustained in future years, as the market matures, but it is not unreasonable to anticipate that this market could reach $9 billion in size by 2003. However, other factors, such as price erosion or major disruptions to Java standards, could cause the market to fall well short of this level (see Alternative View).

- We predict that the market leaders by the end of 2000 (based on predicted real 2000 revenue for EJB application servers, not numbers of licenses, internal transfers of embedded licenses, or arbitrary allocation of revenue from group licenses) will be IBM and BEA Systems, each with about 24 percent of the market, ATG with a 10 percent share, iPlanet with a 9 percent share and Allaire with an 8 percent share.

- iPlanet asserts that its revenues for 1999 and expectations for 2000 are considerably better than our analysis suggests, but iPlanet's unusual corporate structure makes it hard to verify their claims. Given the multiple disruptions of 1999 and the dependence of iPlanet on relatively few large sales, we believe our lower estimates to be accurate. iPlanet might confound our predictions if its claim to fame as the first application server certified to be J2EE-compliant resonates with buyers, however, we see little evidence so far that this "merit badge" is particularly influential in buying criteria this year.

- Allaire is currently introducing its EJB-based products based on the integration of in-house developments and acquired technology. Its intention to focus on midsize deployments and a highly configurable server particularly suitable for embedding as an OEM technology in ISV products indicates that it has identified two niches it believes it can exploit.

- Close behind this group is a pair of vendors with 5 percent to 7 percent predicted share: SilverStream and Sybase. These vendors are neck-and-neck in 2000, and either could come out ahead. SilverStream is growing much faster but from a smaller base. Its ability to continue to grow rapidly will depend on its success in making the transition from a semiproprietary model noted for the productivity of its development environment to a model based on embracing the J2EE platform while still somehow differentiating itself by ease of development.

- Sybase has a good base established for EAS, especially in certain vertical markets such as finance. However, we anticipate it growing somewhat slower than this very fast-growing market, with the consequent drop in market share. With the organizational focus on two specific markets, namely the financial sector and the small but rapidly ballooning mobile sector, it is possible that Sybase may grow faster than we have estimated here; success in those two segments may also pull through sales in the broader market. Sybase is one of the few companies that has the potential to either climb into the general-purpose vendor group with a 15 percent to 20 percent market share or to fall back into the pack of sub-10 percent niche vendors.

- A third group of vendors with share in the 3 percent range includes Oracle and Bluestone. Oracle claims significantly larger application server revenue than we are actually crediting, and it is possible that we are undercounting their contribution. However, we are taking a conservative view of what really constitutes application server revenue, discounting revenue that is carved out from deals in which the customer may not even realize they have the application server, much less actually use it, or from sales of applications that embed the application server.

- We are assuming that revenues from JServer, Oracle's JVM in the database, are predominantly attributable to conventional application server usage (albeit this is a physical two-tier, logical three-tier model); however, this can only be an estimate or "revenue proxy," based on older pricing practices, since

for some time now, Oracle has been including JServer in its database licenses, and no separate revenue figures are available. We also identified that Oracle Application Server (OAS) revenues predominantly derive from one of three sources: (1) usage as a Web server, (2) usage of the PL/SQL Cartridge, i.e., as a gateway to marshal calls to PL/SQL database stored procedure and (3) embedded or bundled licenses in sales of Oracle Applications or Oracle Enterprise Developer Suite. Oracle's revenues for 2000 are probably the hardest to forecast, since both the technology and sales model are due to undergo significant revision around the middle of the year. However, we don't expect this to make a dramatic difference to Oracle's share in the remainder of 2000, although Oracle will remain a strategic vendor of e-business infrastructure technology when its product lines are considered in a more general way.

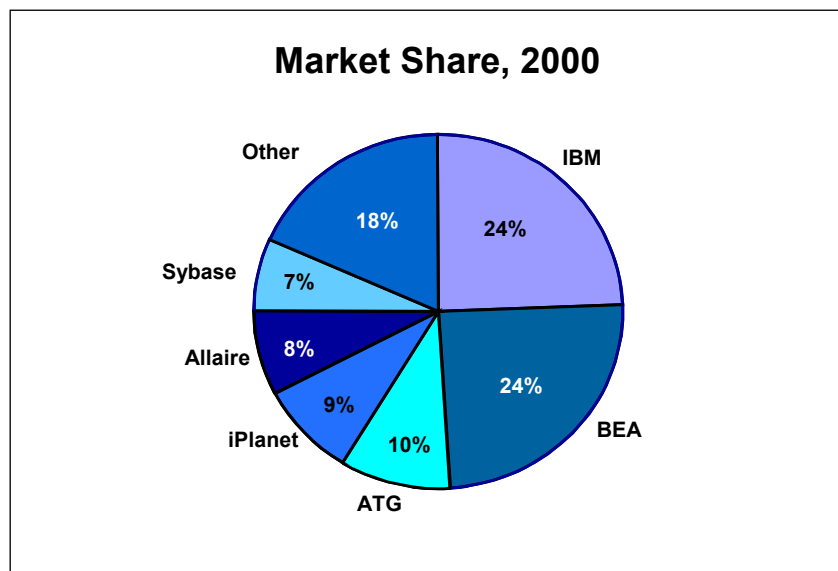**Table 1: Application Server Market Share**

Vendor	Market Share %	
	Forecast % 2000	**Estimated % 1999**
IBM	24%	16%
BEA	24%	32%
Oracle	3%	5%
iPlanet	9%	6%
Sybase	7%	15%
SilverStream	5%	4%
Allaire	8%	6%
ATG	10%	5%
Persistence	1%	2%
Inprise	1%	2%
Iona	1%	0%
Bluestone	3%	3%
Gemstone	2%	3%
Secant	0%	1%
ObjectSpace	1%	1%

Source: Giga Information Group

Market Share, 1999

	Percentage
IBM	16%
BEA	32%
ATG	5%
iPlanet	6%
Allaire	6%
Sybase	15%
Other	20%

Source: Giga Information Group   Figure 1

Market Share, 2000

	Percentage
IBM	24%
BEA	24%
ATG	10%
iPlanet	9%
Allaire	8%
Sybase	7%
Other	18%

Source: Giga Information Group   Figure 2

Market Analysis

The market has clearly moved into a new stage in which there is a top group of leading vendors, and a second group of niche vendors, although a couple hover in between the groups (SilverStream and Sybase), and could go either way.

For other vendors in the "niche" group, it is important that they have a clear understanding of what their niche is, and a technology, marketing and sales strategy to match that niche. Some niches like mobile may be best served by selling to carriers on an OEM basis, although larger corporations will also implement their own mobile application hosting environments. For vendors not in the top group today that are still executing an "anything for everybody" kind of product marketing strategy, there is a significant danger that they will fail

to make a profitable business model from that approach. Other possible niches include "the application server that goes with your *widget*," where the widget may be a dominant DBMS, a dominant application, a carrier-based service, or any other form of embedded strategy where the application server is subsumed wholly within another line of business. However, this business will still probably go mainly to OEM sales of the market-leading application servers, depending on the market.

Another scenario for some of these vendors not in the top group is to be acquired by a much larger company that has a significant sales channel already selling to the right audience. In general, these will be systems vendors, but other candidate acquirers include carriers and service providers that may wish to embed an application server in their higher-level offering. For those investment bankers looking to put a deal together, the most attractive acquisition targets at this moment appear to be Bluestone, Gemstone, Inprise, ObjectSpace, Persistence, Secant and Iona. SilverStream would be a very attractive partner, but at least for now, it appears committed to a more independent course; of all the smaller players, it appears to have the best chance of being able to pull that off. Iona is also engaged in an independent strategy, with some chance of success, but it could still probably be bought by the right buyer. Inprise looks especially vulnerable following the failure of its ill-fated merger attempt with **Corel** and the concomitant collapse in its share price.

At GigaWorld IT Forum 2000, we presented this updated version of our market chart depicting the positions of many of these players (and a few more) in the market, not from a market-share perspective, but from a "fit to purpose" perspective. For this Planning Assumption, we have updated the chart to include ATG, Allaire and HAHT. Historically, Giga tracked ATG, Allaire and HAHT in a separate category called "Web Application Servers." Today, this is no longer a separately distinguishable category, although HAHT is executing a somewhat different strategy that is more complementary to SAP, which is proving to be one of the more successful niche strategies as discussed above.
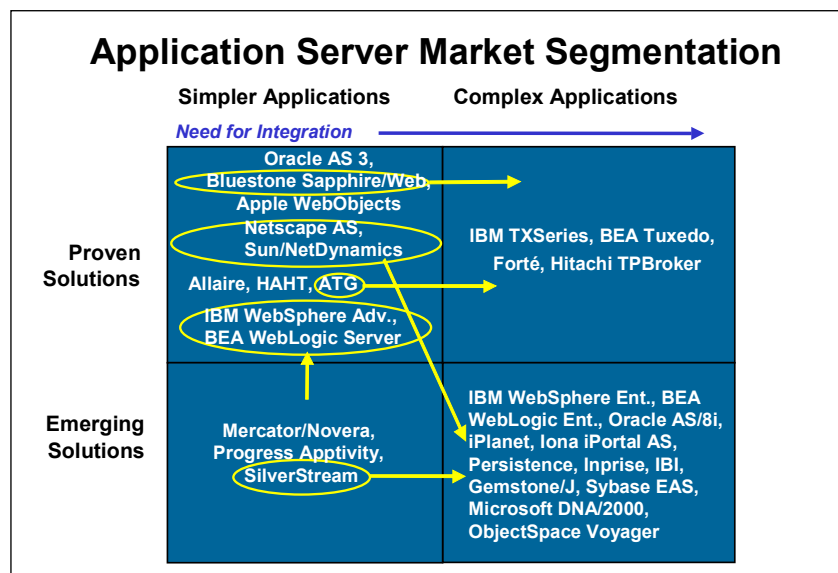
Source: Giga Information Group   Figure 3

Alternative View

The most significant source of uncertainty in this market is the possible disruptive effect of the debate over Java standards between IBM and Sun. At present, the two companies appear to have reached a position where they agree to disagree and continue to debate their respective positions in a semipublic manner. If the debate becomes more strident, it may damage buyer confidence in the Java standards process, which would slow market growth. A complete break between Sun and IBM (currently highly unlikely) would dramatically damage confidence and severely slow the market. Conversely, any uncertainty over the standards process will

most favor those vendors seen to be large enough to prosper even in the absence of a unified standard: BEA, IBM and Sun (iPlanet). However, we now regard this as a low probability.

Another significant wild card is the range of possible outcomes associated with the breakup of Microsoft. Some outside scenarios could impact this market significantly, including Microsoft acquiring one of the players in this market or taking actions around Next Generation Windows Services that impact the EJB market. We have factored our current expectations about these scenarios into our market projections.

Findings & Recommendations

Larger, more conservative clients looking to make large infrastructure commitments to an application server should, as usual, work mainly with the vendors in the leading group: IBM, BEA Systems, and perhaps ATG, iPlanet and Allaire (depending on the type of company and the types of applications).

For less strategic commitments at project or departmental levels, it is still perfectly acceptable to engage with the other vendors on the list, if their niche solution offers unique value-add relative to one of the more general-purpose solutions. For example, an Oracle-centric company may prefer Oracle's application server because of the closeness of its integration with Oracle8i, and this scenario can even be legitimately extended to general strategic usage in homogeneous Oracle-centric environments. But in engaging with these other vendors, the ability of that vendor to provide future support should also be considered, as well as other standard buying criteria, such as financial strength and price/value.

Whenever considering whether it is appropriate to engage with a smaller vendor occupying a niche position, remember that the risk of doing so may be reduced by the portability of any application built for that platform. The more portable the application, the lower the switching costs of going to another application server, which reduces the potential downside costs should it be necessary to make such a switch. Thus, engaging with a smaller vendor, but getting locked in to proprietary extensions, should be avoided, if at all possible.

The decision to exploit a unique capability of a niche vendor can be thought of in terms of a trade-off between buy and build, where the build cost needs to include the ongoing maintenance cost of creating a custom solution based around a more standard application server. The decision must also realistically account for whether you have the expertise and resources to create an equivalent solution yourself at any cost. In any such adoption of niche capabilities, it is essential that the dependencies be well understood so that appropriate contingency plans and escape routes can be put in place.

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