# On the Cost of Selling an Enterprise Learning System

## Summary

- Using industry-average data, the cost of selling a Blackboard enterprise learning system is estimated to be $259,000 per sale. Analysis of the third-quarter 2005 data estimates this cost at $280,913. Other estimates range as low as $222,386.

- This cost compares to an estimated cost of $78,000 per sale for commercially-marketed open source software and $450 to $1000 for community-building for the uPortal product.

- The high cost of marketing software is influenced by the procurement practices and expectations and demands of potential clients.

## Background

One of the benefits cited for open source software is the lower cost of marketing. Potential users of open source software are expected to "download and try" the software, read available documentation and comments, and talk with other users rather than depend upon structured demonstrations, "team" presentations, and elaborate proposals.

This paper responds to the simple question: "What does it cost to sell an enterprise learning system?" Because Blackboard Inc. is a public corporation that makes financial and performance data publicly available, Blackboard data is used for this computation—there is no other reason for selecting Blackboard over another commercial system.[1] To demonstrate that Blackboard operates similar to software firms, the Blackboard data is compared to Siebel Systems Inc., a successful software firm that industry experts use as an example.

Two analyses are provided: The first uses industry-wide averages and the annual license (and maintenance) fee for a Blackboard enterprise system. The second follows the analysis of Siebel Systems Inc. by Larry Augustine in his presentation "The Next Wave of Open Source: Applications" given at the Open Source Business Conference 2005.[2]

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[1] WebCT was and most software suppliers focusing on higher education are private firms not required to make financial and performance data public. This analysis does not do a comparison with firms providing learning systems primarily to businesses and government agencies.

[2] He is Chief Executive Officer of MedSphere Systems Inc. He is also on the Board of Open Source Development Labs, Inc.—Linux and Linux initiatives and legal defense fund, SugarCRM Inc.—open source customer relationships management system, JBoss Inc.—support for specific open source software products, and VA Systems Inc.—host of SourceForge and parent of Open Source Technology Group. The program, presentations, audio, and supporting documents for the Open Source Business Conference 2005 can be found at www.immagic.com/eLibrary/ARCHIVES/GENERAL/IDG_US/I050405C.pdf

Preliminary analysis of the cost of sales was done for a presentation for SURF in Amsterdam, the Netherlands on 28 September 2005.[3] Subsequently Michael Feldstein, SUNY Learning Network, asked how the estimate was derived.

When Blackboard offered to acquire WebCT, the analysts' briefing contained additional data used in to the computation.[4]

## The Initial Estimate

The estimate using software industry averages was $259,000 per sale. This estimate was developed based on an annual license fee of $75,000—a number reported by several current users needing or asked to upgrade their Blackboard learning system license.

> The typical annual maintenance fee quoted for a college or university is $75,000 per year (e.g. Humboldt State University) at 22% of list price, the license fee would be $340,909. Goldman Sachs quotes 74% of that amount is consistently used for sales and marketing costs, which gives the $259,090.[5]

Blackboard has a combined maintenance and licensing fee rather than a permanent licensing fee. This means the right to use the software terminates at the end of the annual license unless there is a subsequent agreement. When software licensing began in the late 1960s and early 1970s, the annual maintenance was 10%. This has subsequently increased and now exceeds 15%; 22% is accepted as an industry average.[6] The annual increase in cost to the users continues to increase with increases in licensee fees even if the percentage does not increase.

## A Subsequent Estimate

Financial statements and the analysts' briefing for the merger provide another way to estimate the cost.[7]

The total number of clients, as defined for financial reporting, is shown in Table 1. Since a "client" could be a system of colleges and universities or a consortium—like California State University, State University of New York, or the University of North Carolina's

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[3] Jim Farmer, "Electronic Learning Environment: The Future," 28 September 2005 at www.immagic.com/eLibrary/GENERAL/IMM/I050928F. Michael Feldstein's question and my response can be found at www.immagic.com/eLibrary/GENERAL/IMM/I0511068F.

[4] Blackboard claims they "merged" with WebCT, but it was Blackboard dollars that paid for the acquisition. Blackboard may operate the combined companies more as a merger than an acquisition.

[5] email, Farmer to Feldstein, "Cost of selling a system," 6 November 2005. The phrase "annual maintenance fee" should have read "annual license and maintenance fee."

[6] Details of software licensing practices for PeopleSoft and Oracle are given in the trial exhibits submitted during litigation of the acquisition. ePortaro president Joseph A. Chalmers came from the software industry and has made similar observations about the costs of software maintenance.

[7] Blackboard held a conference call for financial analysts about the WebCT acquisition on October 12, 2005. Blackboard briefly made a recording of the conference call available on its Website. The briefing was accompanied by slides. Both are available at http://www.immagic.com/eLibrary/ARCHIVES/GENERAL/BB_INC/B051012U.pdf

Teaching and Learning Technology Consortium—the number of colleges and universities using the software is more than the clients listed in Table 1. Clients that use Blackboard as a service would be included; colleges and universities receiving application support from an on-line provider (ASP) using Blackboard would not be included.

| | Blackboard | WebCT | Merged | Share |
|---|---|---|---|---|
| U.S. Higher Education | 1,235 | 857 | 2,092 | 56.4% |
| International Higher Education | 504 | 514 | 1,018 | 27.4% |
| K-12 (Primary and Secondary) | 387 | 48 | 435 | 11.7% |
| Other | 103 | 61 | 164 | 4.4% |
| | 2,229 | 1,480 | 3,709 | 100.0% |
| Higher Education | 1,739 | 1,371 | 3,110 | 83.9% |
| Renewal Rate | 91.0% | 88.0% | 89.8% | |

Table 1 – Number of Blackboard and WebCT Clients, October 2005

Third quarter 2005 Blackboard listed 38 new clients as shown in Table 2.[8]

| Third Quarter New Clients | Number | Share |
|---|---|---|
| U.S. Higher Education | 13 | 34.2% |
| International | 13 | 34.2% |
| K-12 | 12 | 31.6% |
| Other | | 0.0% |
| Total | 38 | 100.0% |
| Computed Loss | 48 | |

Table 2 – New Clients, Third Quarter 2005

To obtain the cost of sales and marketing, allocations need to be made for general administration and stock-based compensation. These allocations are shown in Table 3. General administrative costs and the Stock-based compensation—$4,001,000—are expenses allocated over all other costs.

This yields total sales and marketing costs of $10,675,000. With 38 new clients, the resulting cost per sale is $280,913 as compared to $259,090 of the first estimate.

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[8] Clients licensing additional systems would not be included in the count.

| | Reported | Allocation | Allocated |
|---|---|---|---|
| Revenue | | | |
| Product | 25,468 | | |
| Professional Services | 4,308 | | |
| Total | 29,776 | | |
| | | | |
| Expenses | | | |
| Cost of product revenue | 6,813 | | |
| Cost of professional services | 2,378 | | |
| Total Direct | 9,191 | | |
| | | | |
| Research and development | 3,537 | | |
| Sales and Marketing | 9,074 | | |
| General Administration | 3,957 | | |
| Amortization of intangibles | 879 | | |
| Stock-based compensation | 44 | | |
| Total Indirect | 17,491 | | |
| Total | 26,682 | | |
| | | | |
| Product+R&D+Amortization | 11,229 | 1,981 | 13,210 |
| Services | 2,378 | 419 | 2,797 |
| Sales+Marketing | 9,074 | 1,601 | 10,675 |
| GA+Stock | 4,001 | | |
| | 26,682 | 4,001 | 26,682 |
| | | | |
| Allocation base | | 22,681 | |
| | | | |
| Number of sales | | | 38 |
| Cost per sale | | | 280,913 |

Table 3 – Third Quarter 2005 Financials with Allocations
(financial statement data in thousands)

## About the Numbers

These are estimates. There are several choices that can affect the computation. GAAP (Generally Accepted Accounting Practices) provides latitude on the classification of expenditures. For example, a meeting with user representatives could be considered part of general administration—typical when corporate executives are hosting the meeting. Or if could be considered research and development if the purpose is to better understand the need (requirements) for future development—typical of a "focus group." Or even sales and marketing if the purpose is to encourage future sales. Often such a meeting would satisfy all three at different levels; the accounting classification depends upon local practices and an auditor's judgment. The reasonableness of the Blackboard data can tested by comparison with other software companies.

In this case stock-based compensation was considered the same as general and administrative expense assuming this is similar to executive compensation. Amortization is not included in the computation of EBITA—earnings before interest, taxes, and amortization—the definition of earnings often used by financial analysts, especially when considering the long-term value of stock. In this case amortization had no significant effect on the cost per sale; it did increase the allocation of general administration to research and development. It was considered a cost of software development similar to outsourced development.

The number most likely to affect the result is the number of "clients." Although the source of this number did not suggest there were other clients, there may have been clients not listed. If the number of clients were equivalent to the number that would have been lost—representing no growth, then the cost per sale would be $222,386 instead of $280,913, a 21% decrease.

The relationship between number of clients for growth targets and two loss rates are shown in Table 4. The growth rate represents the year-over-year increase in number of clients with targets of no growth, 5%, 10% and 15%. The reported current loss rate is 11.2%; likely the real number will be closer to 5% since changes from Blackboard to WebCT will now not decrease the number of clients.

| Current number of clients | 3709 | 3709 | 3709 | 3709 |
|---|---|---|---|---|
| Growth rate | 0% | 5% | 10% | 15% |
| Total clients | 3709 | 3894 | 4080 | 4265 |
| | | | | |
| Loss per year | 5% | 5% | 5% | 5% |
| Total sales | 185 | 371 | 556 | 742 |
| | | | | |
| Loss per year | 11.2% | 11.2% | 11.2% | 11.2% |
| Total sales | 415 | 601 | 786 | 972 |

Table 4 – Number of Sales for Growth Targets for Current and Projected Loss Rates

To achieve growth will require a major increase in the productivity of sales from the reported 38 per quarter (152 per year) to achieve growth of 5 to 15%.

There are two factors that will increase revenue faster than the number of clients. First, the current marketing effort appears to be focused on systems and consortia so the number of universities, colleges, and school districts will increase (or decrease) much faster than the number of clients. The number of clients could actually decrease simultaneous with a substantial increase in the number of installations and users and revenue. This increase will be evident in the revenue per client.

Second, revenue per client is expected to increase. Blackboard noted that only 62% of the WebCT clients have enterprise versions of its system. The average license revenue per

client for WebCT was $21,100 as compared to Blackboard's $35,000. The implication is WebCT clients will move from current versions to enterprise versions increasing revenue per client. Blackboard can similarly "upgrade" its clients as well toward the $75,000 revenue per year. Blackboard also notes their "suite" of five-products. Through cross-selling a client with "full adopted" Blackboard products will be paying $160,000 per year.

The Third Quarter 2005 differs from the historical mix of clients. Historically 83.9% of Blackboard and WebCT clients were higher education. In this quarter 68.4% of new clients were from higher education; primary and secondary education historically was 11.7% but was 31.6% of the quarter's new clients. This change represents the mature and near-monopoly market of the combination in higher education and Blackboard's focus on the emerging K-12 market, especially in the U.S. where "No Child Left Behind" provides incentives for the use of educational technology.

## Comparison with Siebel Systems Inc.

Is Blackboard typical of a software supplier? Larry Augustine has used Siebel Systems Inc., being acquired by Oracle Corporation, in analyzing the difference as an example between commercial and open source software products. A comparison of Blackboard's Third Quarter 2005 to Siebel's calendar year 2004 is given in Table 5.[9]

| | Blackboard Inc. | | Siebel Systems Inc. | |
|---|---|---|---|---|
| | Third Quarter 2005 | | | |
| Revenue | | | | |
| Product | 25,468 | 85.5% | 487,127 | 36.4% |
| Software Maintenance | | 0.0% | 469,751 | 35.1% |
| Professional Services | 4,308 | 14.5% | 382,915 | 28.6% |
| Total Revenue | 29,776 | | 1,339,793 | |
| | | | | |
| Expenses | | | | |
| Cost of product revenue | 6,813 | 22.9% | 13,316 | 1.0% |
| Cost of professional services | 2,378 | 8.0% | 443,585 | 33.1% |
| Total Cost of Revenue | 9,191 | 30.9% | 456,901 | 34.1% |
| | | | | |
| Research and development | 3,537 | 11.9% | 299,051 | 22.3% |
| Sales and Marketing | 9,074 | 30.5% | 337,690 | 25.2% |
| General Administration | 3,957 | 13.3% | 104,541 | 7.8% |
| Amortization of intangibles | 879 | 3.0% | | |
| Stock-based compensation | 44 | 0.1% | | |
| Total Other Expenses | 17,491 | 58.7% | 741,282 | 55.3% |
| Total Expenses | 26,682 | 89.6% | 1,198,183 | 89.4% |
| | | | | |
| Product+R&D+Amortization | 11,229 | 37.7% | 312,367 | 23.3% |

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[9] Augustine's analysis is based on EBITA; Blackboard's financial statements with amortization are used here.

| | | | | |
|---|---|---|---|---|
| Services | 2,378 | 8.0% | 443,585 | 33.1% |
| Sales+Marketing | 9,074 | 30.5% | 337,690 | 25.2% |
| GA+Stock | 4,001 | 13.4% | 104,541 | 7.8% |
| | 26,682 | 89.6% | 1,198,183 | 89.4% |

Table 5 – Comparison of Blackboard Inc. and Siebel Systems Inc.

The important comparisons are the percentages of revenue. Siebel separates revenue from software licensing from maintenance; combined Siebel has 71.5% of its revenue from software and 28.6% from services compared to Blackboard's 85.5% from software and 14.5% from services. MIT's Michael Cusumano has shown that successful software suppliers move from licensing revenue to services revenue. In this sense Siebel is more advanced or "mature" than the older Blackboard.[10]

In his analysis of Siebel Augustine compared the current marketing effort—25.2% of revenue—with open source marketing—9.9% of less revenue—suggesting the number of sales would remain the same. He also commented that even though Siebel's revenue would decline from $1.3 billion to $853 million because open source software is available at no cost. Profit would decline from $142 to $95, but the earnings before interest, taxes, and amortization (EBITA) would increase from 10.6% of revenue to 11.2%

Blackboard does spend about half as much on research and development—11.9% as compared to 22.3% of revenue—as Siebel. This suggests the Blackboard products are more mature than Siebel's—requiring less development as compared to "maintenance" of current features. Blackboard also spends more on sales and marketing—30.5% as compared to 25.2% of revenue. If the allocations from Table 3 were used, Blackboard sales and marketing would be 35.9%.

The sharp difference is cost of services where Blackboard shows gross profit of 44.8% as compared to Siebel's loss of 13.7%. Note that Blackboard's services are a significant and growing profit center as compared to Siebel. When Siebel services integrate with Oracle services, the cost of services as a percent of revenue will likely decline. Siebel shows lower general and administrative expenses—13.3% as compared to Siebel's 7.8%—a possible economy of scale. As Blackboard integrates the WebCT acquisition, their general and administrative expenses as a percent of revenue will decline, likely by as much as 26% of the combined expenses, which makes them comparable to Siebel, a much larger company.

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[10] See Michael A. Cusumano, "The Business of Software : What Every Manager, Programmer, and Entrepreneur Must Know to Thrive and Survive in Good Times and Bad," The Free Press Simon & Schuster, New York, 2 March 2004.

## On the Cost of Sales

Software suppliers do not spend on sales and marketing not considered "necessary." The costs are driven by customer demands and customer expectations. Enterprise procurements can be very expensive for software suppliers. Requiring extensive proposal responses, large-scale demonstrations using extensive prescribed scripts, and presentations with experts drawn throughout the company are required by customers as a condition of doing business; this is costly.

Similarly, software suppliers have been asked to sponsor conferences, especially with expensive conference exhibits, subsidize user groups, and support higher education initiatives. For this reason the cost of sales for a software supplier can be 25.2% compared to open source's 9.9%.

Open source software does not finance such sales activities and will be excluded from such procurements. Open source procurement requires the users either download and pilot the software or use an established on-line service to test for fitness to their needs. The software is described by the documentation and the product's Website as contrasted to marketing "collateral." Colleagues remain the primary and most objective sources of information.

If Blackboard were to adopt these sales practices then the 35.9% of allocated sales and marketing would decreases to 9.9% and could result in a 26% decrease in prices. There is yet, however, no documented case of where this change has been successful. JBoss and Novell are now attempting such a transformation.

## The uPortal Experience

A comparison with JA-SIG's uPortal open source software may be useful to illustrate the difference of "costs of building community" with commercial sales and marketing practices.[11] Comparable software products—marking-leading Vignette and Plumtree— had software license prices similar to those of Blackboard.[12, 13]

For the three-year project, uPortal budgeted $450,000 for administration and community development; actual expenses were about $210,000 with a reallocation of funds to development. The six JA-SIG Conferences were subsidized by Sun Microsystems Inc. at

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[11] The author was uPortal project administrator during the initial three years. Ken Weiner was project manager and Peter Kharchenko was the chief architect.

[12] Blackboard itself marketed a portal. Subsequently it describes the required features incorporated into the Blackboard suite as "Blackboard community." There is now a trend to incorporate portals into middleware and assuming, because of standardization, portals will become commodity products at commodity prices. Other open source products are available though without some of the features needed for higher education. Oracle Corporation has a portal product, but consistently gives "grants" that cover most or all of the license costs.

[13] When uPortal was being developed, Epicentric was leading in both innovation and marketshare. Epicentric was purchased by Vignette subsequently purchased by EMC. Plumtree was recently acquired by BEA Systems.

an estimated cost of $180,000. The conferences are now sustained through comparably low conference fees. The total cost of community development (and administration) was $390,000. There were an estimated 400 installations of the open source code and 500 incorporated into commercial products.[14] Using this estimate the cost of community development—the open-source equivalent of sales and marketing—is $975 for the open source installations and $433 for the total of 900.

uPortal has developed three sustaining communities. The most successful has been the ESUP Portail consortium in France. The original 17 participating universities have expanded installations to 30 universities, school districts, and agencies. ESUP has integrated CAS security in Moodle for their users and made it available to the Moodle community. ESUP has separately developed the ESUP Help Desk application and associated two-day training program—a product that may be better than similar commercial products. JA-SIG UK has continued to sponsor semi-annual meetings of those using JA-SIG open source software. In the U.S. a combination of universities has continued to develop the uPortal software itself. All of this has been done without government or foundation support. A community is now developing around Renesselaer Polytechnic University's open standards calendar version of the University of Washington's calendar application—called Bedework.

Further analysis of sales and marketing costs as compared to the cost of developing and maintain an open source community would contribute to a better understanding of how a commercial firm could achieve an improvement in the productivity of sales and marketing and how open source communities can be sustained.

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[14] A SCT representative at the JA-SIG Conference in June 2005 said they had 448 licenses for the Luminus product. Unicon Inc. also markets an extended Academus version of uPortal installed at an estimated 50 institutions.