Lowering the Cost of Business Intelligence With Open Source

A Comparison of Open Source and Traditional Vendor Costs

2010 Technology White Paper

Third Nature

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Summary

When looking at the total cost of ownership (TCO) of BI tools, it's known that labor trumps all other factors when a full project is considered from start to finish. This is often used as a justification to ignore the cost of software and support, since the largest proportion of a BI project's cost at any point in time is dominated by labor.

The problem with this thinking is that there is little evidence of a significant difference in effort required with different BI tools, either during development or in maintenance. With the overall differences being relatively small, one thing we can focus on is the total cost of software (TCS) since this is partly under our control.

The top reason given for the use of open source business intelligence software is cost savings. The question is whether open source matters when it comes to license and support costs. How real are cost savings? How much does BI software and ongoing support actually cost?

This is a complex question because of the extreme variability and lack of transparency in traditional enterprise software license models, packaging and pricing.

The short answer is that open source does matter. At the entry level with a small number of users, open source can be a little to a lot less expensive. As the environment scales up the difference becomes much more noticeable, as shown in Figure 1.

This chart shows the cost savings between the average of the top four BI vendors and Pentaho, the open source vendor used in this paper.

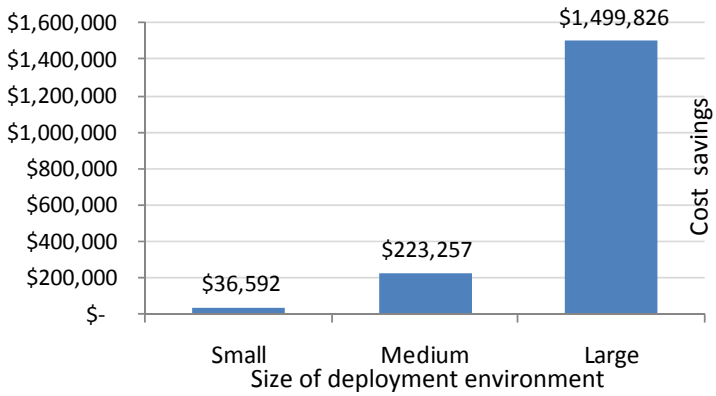


Figure 1: Average 3-year cost savings with open source BI

With a small configuration of 25 users, the average cost difference is about 50% or $36,000. With a large configuration of 500 users the difference is slightly more than 15 times. There is a wide range between the least and most expensive vendors, so the savings vary considerably depending on which vendor you are considering.

A key metric to use when comparing software cost across different sized environments is the average cost per user. It varies over the size of environment because vendors have different pricing models for entry-level and larger configurations. This metric will help if you want to know how much it will cost to grow the size of a BI deployment. In many open source models the per user cost decreases since the price is not based on number of users.

The chart in Figure 2 shows the per-user cost savings over a three year period when using open source. The cost of the top BI vendors was averaged in each of three differently sized environments and compared to the cost of an open source license for the same environment.

The increase in per-user savings from small to large is a result of the cost difference in entry-level BI packages from the top vendors and their standard enterprise licenses, and the general license scaling advantage of open source license models.

As a rule, you can expect to save on both license and support costs with open source business intelligence tools. However, the savings will vary depending on a great many factors.

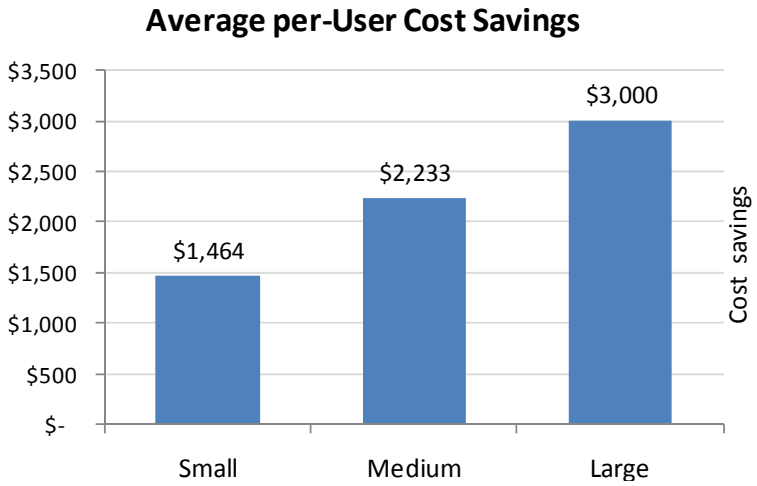


Figure 2: Average 3-year cost savings per user of open source BI, by deployment size

The rest of this paper explains the details of enterprise BI licensing, the factors that affect prices, and the costs of the top vendors for a specific set of configurations.

Cost Comparisons: How the Vendors Measure Up

This paper examines the software and support costs of the leading business intelligence providers and compares them to a commercial open source vendor (Pentaho) in an attempt to answer the question of whether open source matters when comparing the total cost of BI software.

The Maze of Software Licensing

Understanding BI licenses and pricing is difficult for buyers. Each vendor organizes features differently and assigns them to different components or user roles. Typically, at least one feature you require exists in an add-on module that offers no other value but significant cost. You have to rely on the sales rep to navigate through the complexity and deliver the best configuration possible.

The many factors that are used to determine the price of the software are another challenge. Most vendors treat this information as if it were a trade secret, like they do with their list prices. This lack of transparency is problem for the buyer in much the same way lack of transparency is a problem for a new car buyer. What's a reasonable price? How much are others paying for the same software? Open source vendors tend to have more transparent and simpler license models that lend transparency to the process.

Comparing Product Costs

The best way to compare BI costs is to create scenarios with the number and types of users, then use the scenarios to price the software. We used three different scenarios to emulate an entry-level or small department configuration and the growth path from this to a rollout of BI to a broader organization. The types and number of users are shown in Table 1.

Size	Total Users	Admin Users	Professional Developers	Expert Users	Basic Users
Small	25	1	1	2	21
Medium	100	2	3	10	85
Large	500	3	15	50	432

Table 1: usage scenarios and user counts

The small configuration is a total of 25 users, medium for us is 100 users, and large is 500 users.

We applied the 80-18-2 rule for the distribution of BI users, where 80% of the users do little more than basic interaction with existing reports or dashboards, 18% of the users modify the objects and do a modest level of ad-hoc query and analysis, and 2% are professional BI developers or analysts who support others in their department. We also include a small number of BI administrators responsible for the overall management of the environment. It's important to do this when buying BI tools because of the large difference in the cost of components, making it easy to overpay.

The level of interaction at the basic level is viewing dashboards, running and scheduling reports, filling in report parameters and simple sorting and filtering of results. Expert users and professional developers need the ability to create objects in the BI environment and perform ad-hoc activities.

Comparing BI products is difficult because of the variability in packaging and bundling of features. Our assumption is that any end-user features beyond the core functions of static and interactive reports, dashboards, and ad-hoc query and analysis is an extra and irrelevant to our costing.

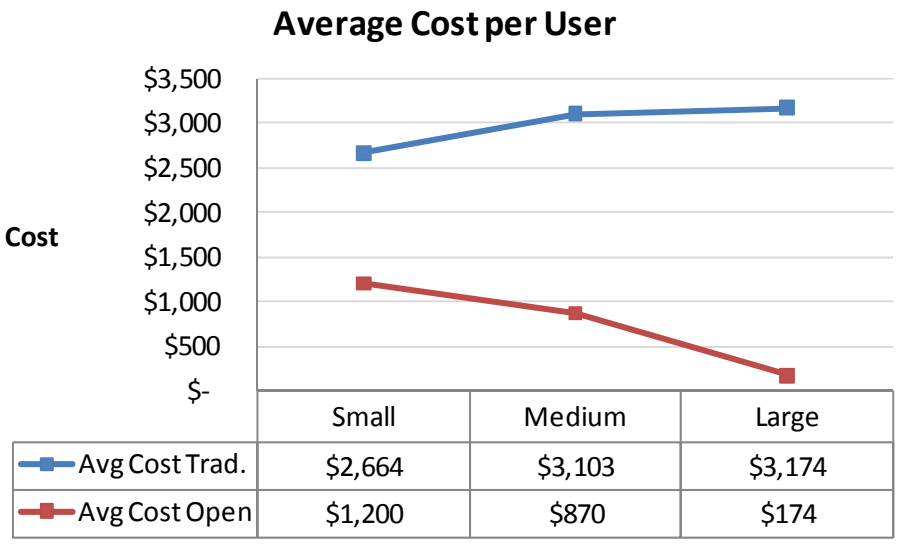
All product configurations we created are meant to provide only these functions for the given scenario. The alternative approach is to try and get an apples-apples feature-based configuration. This is almost impossible.

Vendors try to compete on numerous features as points of differentiation, which confuses comparison. It's best when evaluating BI software to stick to the features you plan to use and not try to factor in added value of unique features and their relative cost.

Our cost estimates include the production and non-production (development and test) environments. The cost covers both the initial price and the three year cost of support and maintenance.

Comparison of Open Source and Traditional Software

One way to see how serious vendors are about lowering their TCS is by looking at how their cost scales up with the number of users. Figure 3 shows the average per-user cost over three years. Moving from a small 25 user environment to a larger 500 user environment actually increases the per-user cost with traditional BI, while decreasing with open source.



	Small	Medium	Large
Avg Cost Trad.	$2,664	$3,103	$3,174
Avg Cost Open	$1,200	$870	$174

Figure 3: average cost per user, comparing traditional and open source across scenarios

The rise in cost shown in Figure 3 is not representative of all BI vendors. The cost per user declines for some, like Cognos, while increasing for others. This is shown in Figure 4. The rise in cost per user across our scenarios is somewhat misleading because the small scenarios for all vendors but Cognos are using entry-level packages. This can reduce the cost per user by half.

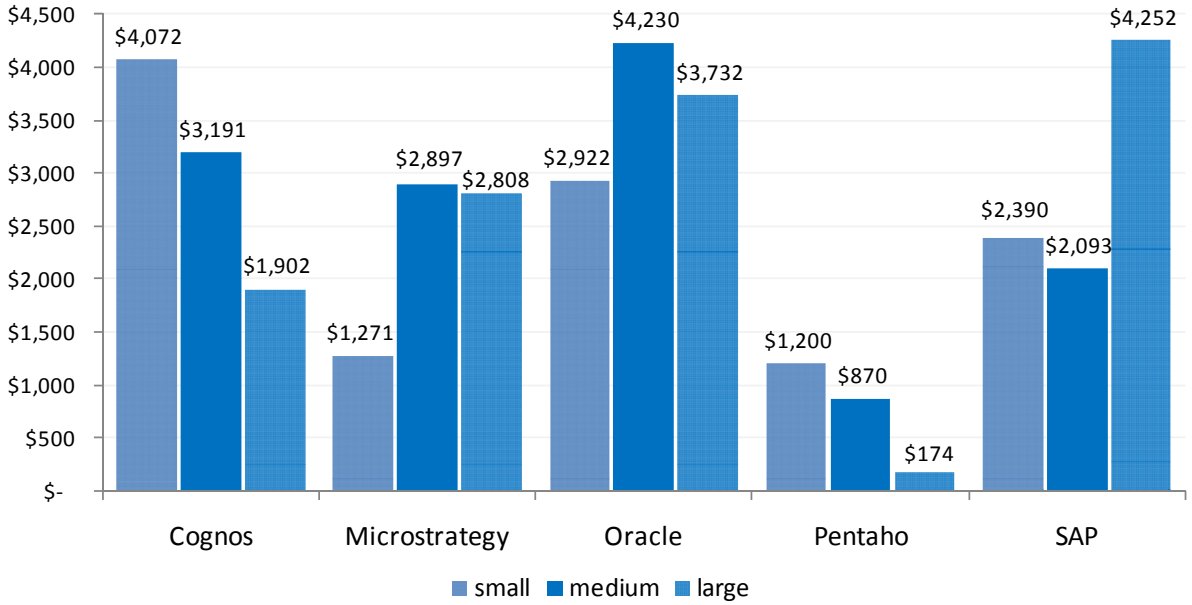


Figure 4: average cost per user over three years, by vendor and scenario

What is important to note is the jump in cost per user when adding licenses. If you take advantage of one of these entry level packages with a plan to deploy to more people at a later time, the cost per user could potentially double.

If your environment won't grow or the BI package is generous enough (as it is with SAP) then these options are good, although still not as inexpensive as open source. If your environment will grow beyond the BI vendor's entry-level package then be prepared for a big increase. It's at this point where the cost advantage of open source BI becomes apparent.

Figure 5 shows the total cost averaged across traditional BI products and compared to the commercial open source cost. For the small configuration the average cost was twice that of open source. With 500 users the difference in average price balloons to almost 20 times the cost of open source.

However, there is a wide range in price between the traditional BI vendors across each of the three size scenarios. When comparing total

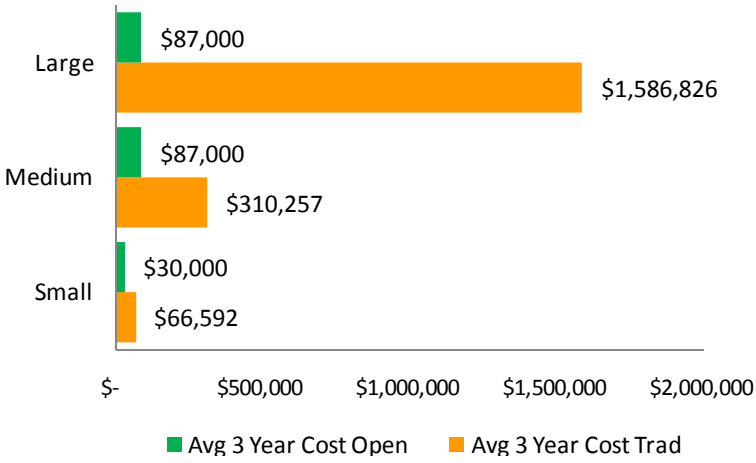


Figure 5: average BI cost per configuration, comparing traditional and open source

cost it can be more interesting to see how the individual vendors compare.

The total three-year cost and the breakdown between license and support are shown for all five vendors in Table 2, broken out by vendor and scenario. The full configuration and pricing details are shown in the "Vendor Pricing Details" section which follows this one.

The gap between MicroStrategy and Pentaho is much narrower for the small scenario in this example, and all the vendors are closest in cost at this level.

The reason for this is simple: all the vendors except for IBM had configurations priced for entry-level that we were able to use. This made traditional BI products more competitive.

Vendor	Size	Total License Cost	Total Support Cost	Total Cost
Cognos	Small	58,184	43,618	101,802
	Medium	182,356	136,707	319,063
	Large	543,584	407,608	951,192
MicroStrategy	Small	10,100	21,666	31,766
	Medium	174,500	115,170	289,670
	Large	845,800	558,228	1,404,028
SAP	Small	36,000	23,760	59,760
	Medium	131,750	86,955	218,705
	Large	1,595,670	1,053,142	2,648,812
Oracle	Small	17,600	29,040	73,040
	Medium	254,800	168,168	422,968
	Large	1,124,200	741,972	1,866,172
Pentaho	Small	0	30,000	30,000
	Medium	0	87,000	87,000
	Large	0	87,000	87,000

Table 2: three year total cost of license and support by vendor and scenario

MicroStrategy is using an open source tactic at the entry level: they give the software away for free for up to 100 users. The reason the price is not zero here is because we had to add several licenses to meet the user feature requirements in our configuration.

While this is an interesting offer, it comes with a catch, as do most of the entry-level packages. Most are limited to a small number of CPUs, usually fewer CPUs than is realistic for a production environment with more than a small number of users. This is in contrast to an open source license where that limitation does not apply.

Conclusion

The pricing information in this report can be used as a guideline, however the exact configuration of licenses is a complex task so adjusting these numbers may not translate to your environment. We avoided discount practices, so the real costs across both traditional and open source vendors will be lower. You can consider this pricing as the high end of what you could pay for these scenarios.

At this point it should be apparent that open source can offer a cost advantage. The amount will vary depending on the size of your environment, availability of entry level BI packages from traditional vendors, and the features you require.

The rationale for deploying open source may be cost savings, but that cost can also vary based on the reason for deploying. If the goal is to replace existing software then the focus should be a reduction in support cost. If the goal is to add users or new features then the focus should be on the relative costs between products.

From a survey of open source users last year, we found that the primary mode of deployment was for new licenses rather than replacement of existing tools, with 32% of organizations adding users to an existing environment via open source rather than the incumbent vendor and 41% using open source for a new project. The deployment scenarios are shown in Figure 6.

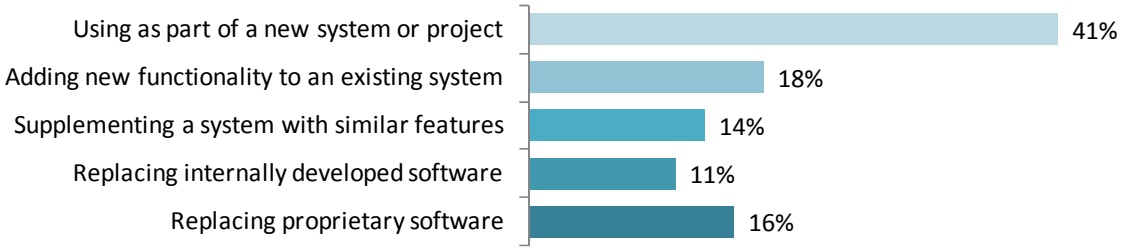


Figure 6: Deployment scenarios for open source BI

New projects are a better deployment model for open source because the high cost of acquisition is a significant barrier to starting a BI project. Traditional vendors' products have been too costly for most departmental budgets or small to medium-sized companies.

The recent introduction of SMB and entry-level packaging by BI vendors has lowered the barrier to entry, but not to the same level as commercial open source. Despite the entry level and SMB offerings, the gap between the least and most expensive BI tools is three times the lowest cost product.

Another advantage open source can offer is simplicity and transparency of licensing. It is easier to see how much you will pay now and in the future. The traditional BI vendors have taken steps to simplify their models, but the lack of transparency with bundling, editions, components, user types and environments will likely continue.

Our final recommendation is to evaluate open source like any other enterprise software. Price doesn't matter if the software doesn't do what you need. Open source software is still software and should be evaluated against the same set of criteria you would use with a similar application from a traditional vendor.

Total Cost of Ownership and Business Intelligence Tools

Components of TCO for Business Intelligence

In order to compare BI costs and determine whether open source matters, we need to look briefly at total cost of ownership. Most BI TCO reports estimate the cost breakdown over a three year period to be approximately 70% labor, 20% software and 10% hardware, as shown in Figure 3.

A standard three year time period was used to calculate the total initial and ongoing costs of BI software. Three to five years are commonly used because that tends to be the range companies use to depreciate capitalized assets, assuming they can capitalize software. For BI software, a longer period is likely to be a better fit because the BI tool refresh cycle for most implementations is five years. We kept to the standard of three years for this paper.

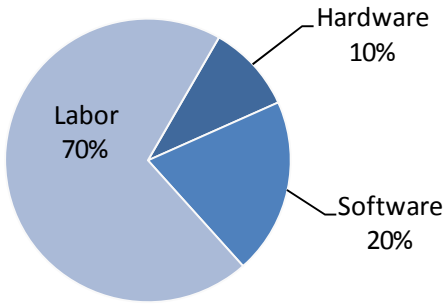


Figure 3: division of BI costs over three years

For example, the 2007 IDC study "Demonstrating Business Value: Selling to Your C-Level Executives" put staffing cost in the range of 60% to 85% over three years. Their advice to save money long-term is to evaluate the features that reduce staffing costs.

The problem with this advice is that labor-saving differences are hard to find or quantify between the tools except over the baseline of hand-coding. Claims of increased productivity via new features are often offset by decreased productivity due to more product complexity. Given the similarity in features across BI products, it's fair to assume productivity is equivalent across most vendors' products. Therefore the primary controllable cost will be software and support.

Underuse is another reason to focus on software as a key factor in reducing BI costs. Most organizations are not fully aligned with their licenses. Some use more software than their licenses allow, but many more are paying for unused software. Several surveys of the BI market report that more than half of BI licenses go unused.

Simplifying Assumptions for This Report

To make the cost comparison more straightforward we made several simplifying assumptions:

- The underlying data warehouse is the same in all cases, and we're simply layering BI on top of that platform. This means the database and hardware costs are equivalent across the different BI tools.
- There are differences in hardware requirements for different BI tools, but it's most often the case that if a tool has a smaller server footprint then it shifts workload to the database, or vice versa. This means that hardware costs are simply shifted, and there is

not a significant difference in hardware cost across BI vendors for the range of size configurations we're using.

- To date, we are not aware of any viable quantitative studies showing that one vendor is significantly easier to use or manage than any other. By "significant" we mean easier to the point where the number of BI staff is measurably lower for a given vendor. This means we can assume that labor costs are reasonably close across the tools.
- All of the vendors have entry-level and small to mid-market (SMB) packages. These are usually restricted to companies of a given revenue size or employee count, so they can't be used or they give a distorted view that applies to only one portion of the market. We used a package only if it was applicable to all customers and fit our scenarios.

Given these assumptions, the primary cost differentiator from one BI environment to another will not be labor but the price of software licenses and support. Hence our focus on the total cost of software (TCS) rather than the total cost of ownership.

Community Versus Commercial Open Source

There is still confusion in the market about what constitutes open source and the difference between community and commercial editions. When we look at software cost, we are looking at supported, enterprise versions of open source BI software because that is most commonly deployed by organizations. If we were comparing unsupported or community editions of open source then the paid license and support costs would be zero.

There are two models of support for open source. One is community-based open source, often call "free and open source" or FOSS for short. The other is commercial open source software, usually abbreviated as COSS.

Most people are familiar with the free and open source model because it's been around the longest and receives the most attention. In this model, volunteers contribute to development and maintenance of the software. In some cases, they may be full-time employees of a non-profit organization owning the software, but the project does not operate like a traditional software company. There is no profit motive. The software is available free of charge to anyone who wants it.

Many of the myths about *commercial* open source stem from this origin in the shareware and FOSS world. In the early days, open source was often designed and built for personal use by individual developers rather than as part of an organization's IT infrastructure.

Because most people are familiar with the FOSS model, they mis-apply the ideas to the COSS model. Commercial open source came about for a different reason. Commercial open source vendors make money by filling gaps in the FOSS model, for example by adding enterprise features and support.

Enterprise use of open source was challenging in the early days because the products lacked much of the "finishing" work commercial products receive. Documentation in FOSS projects is often weak, quality varies based on community, and regularly scheduled fixes, software releases and support are often lacking.

Commercial open source evolved with recognition that companies are willing to pay for support, service, and other less tangible items like indemnification or certifying interoperability with other vendor's products.

A commercial open source vendor is similar to a traditional software vendor, but one difference is that the source code is not shrouded in secrecy. This enables more and deeper interaction between customers and developers, making the open source model more community-focused than the traditional model.

In contrast to the majority of FOSS projects, commercial open source vendors employ most of the project's developers and expect to make a profit while doing so. They provide the same services and support that traditional vendors do, frequently with more flexibility and lower cost. COSS vendors use elements of the proprietary model such as providing support contracts or selling non-open source components that can be purchased in addition to, or in place of, the free version of the software.

The two different editions of software that are offered (community and commercial) can cause confusion. When you evaluate software it is important to note whether you are looking at the free or paid version.

COSS vendors are still software companies. If you purchase a paid enterprise version then you'll find that the experience is not substantially different than buying software from a proprietary vendor. The key difference is the transparency with which COSS vendors operate.

Vendor Pricing Details Used in This Paper

This section contains the detailed configurations for each vendor by small, medium and large scenarios.

The lack of transparency in licensing and prices made this information difficult to obtain. We started with the information that is publicly available at the GSA web site, but this information can be inaccurate and often reflects government discounts. Therefore most of the pricing information here was provided by vendors.

In all cases we attempted to maintain the list prices and ensure that no discounts were applied so our comparisons could be meaningful. This excluded all government, educational and SMB discounts.

Even with this, prices could vary depending on what assumptions are made about specific packaging, editions, bundles and features. We disclosed every line item and what users it was for to make these assumptions clear.

One notable omission from the leading BI vendors (based on market share) is Microsoft. Our assumption of a common data warehouse platform meant we could not include them because they force a specific operating system and database into the mix. The other vendors don't have this dependency. Our estimated pricing for Microsoft showed them to be roughly in line with other BI vendors' per-user costs if all dependencies are taken into account.

IBM: Cognos 8

The pricing for IBM in the small configuration is the highest as a result of their omission of some components from their entry level package and their policy of charging for development and test environments. This adds considerably to their price in both the small and medium configurations.

The licensing of development and test is based on "processor value units" which vary based on CPU models. It's necessary to consult IBM's web site to work out the exact number of PVUs to multiply the unit cost by. In our case, assuming Intel dual-core Xeon processors, this worked out to 100 per CPU which is reflected in the "units' column of the price chart.

User type	Product Component Description	Units	Software Price	Support Price	First Year Cost	3 Year Total
Admin / IT	IBM COGNOS 8 BUSINESS INTELLIGENCE ADMINISTRATOR AUTHORIZED USER LICENSE + SW SUBSCRIPTION & SUPPORT 12 MONTHS	1	$ 13,500	$ -	$ 13,500	$ 13,500
Admin / IT	IBM COGNOS 8 BUSINESS INTELLIGENCE ADMINISTRATOR AUTHORIZED USER ANNUAL SW SUBSCRIPTION & SUPPORT RENEWAL	1	$ -	$ 2,700	$ -	$ 5,400
Professional	IBM COGNOS 8 BUSINESS INTELLIGENCE PROFESSIONAL AUTHORIZED USER LICENSE + SW SUBSCRIPTION & SUPPORT 12 MONTHS	1	$ 3,240	$ -	$ 3,240	$ 3,240
Professional	IBM COGNOS 8 BUSINESS INTELLIGENCE PROFESSIONAL AUTHORIZED USER ANNUAL SW SUBSCRIPTION & SUPPORT RENEWAL	1	$ -	$ 648	$ -	$ 1,296
Expert user	IBM COGNOS 8 BUSINESS INTELLIGENCE ADVANCED BUSINESS AUTHOR AUTHORIZED USER LICENSE + SW SUBSCRIPTION & SUPPORT 12 MONTHS	3	$ 1,630	$ -	$ 4,890	$ 4,890
Expert user	IBM COGNOS 8 BUSINESS INTELLIGENCE ADVANCED BUSINESS AUTHOR AUTHORIZED USER ANNUAL SW SUBSCRIPTION & SUPPORT RENEWAL	3	$ -	$ 326	$ -	$ 1,956
Basic user	IBM COGNOS 8 BUSINESS INTELLIGENCE CONSUMER AUTHORIZED USER LICENSE + SW SUBSCRIPTION & SUPPORT 12 MONTHS	20	$ 865	$ -	$ 17,300	$ 17,300
Basic user	IBM COGNOS 8 BUSINESS INTELLIGENCE CONSUMER AUTHORIZED USER ANNUAL SW SUBSCRIPTION & SUPPORT RENEWAL	20	$ -	$ 173	$ -	$ 6,920
Dev environment	IBM COGNOS 8 BUSINESS INTELLIGENCE FOR NON-PRODUCTION ENVIRONMENT PROCESSOR VALUE UNIT (PVU) LICENSE + SW SUBSCRIPTION & SUPPORT 12 MONTHS	100	$ 338	$ -	$ 33,800	$ 33,800
Dev environment	IBM COGNOS 8 BUSINESS INTELLIGENCE FOR NON-PRODUCTION ENVIRONMENT PROCESSOR VALUE UNIT (PVU) ANNUAL SW SUBSCRIPTION & SUPPORT RENEWAL	100	$ -	$ 68	$ -	$ 13,500
Test environment	n/a	0	$ -	$ -	$ -	$ -
Test environment	n/a	0	$ -	$ 68	$ -	$ -
*Note: dev environment is a single cpu dual core Xeon, PVU calc per IBM is 50*2*				**Totals**	$ 72,730	$101,802

IBM pricing for small BI configuration

The medium configuration adds users and a test environment, but uses the same edition and model as the small configuration (shown on next page).

User type	Product Component Description	Units	Software Price	Support Price	First Year Cost	3 Year Total
Admin / IT	IBM COGNOS 8 BUSINESS INTELLIGENCE ADMINISTRATOR AUTHORIZED USER LICENSE + SW SUBSCRIPTION & SUPPORT 12 MONTHS	2	$ 13,500	$ -	$ 27,000	$ 27,000
Admin / IT	IBM COGNOS 8 BUSINESS INTELLIGENCE ADMINISTRATOR AUTHORIZED USER ANNUAL SW SUBSCRIPTION & SUPPORT RENEWAL	2	$ -	$ 2,700	$ -	$ 10,800
Professional	IBM COGNOS 8 BUSINESS INTELLIGENCE PROFESSIONAL AUTHORIZED USER LICENSE + SW SUBSCRIPTION & SUPPORT 12 MONTHS	3	$ 3,240	$ -	$ 9,720	$ 9,720
Professional	IBM COGNOS 8 BUSINESS INTELLIGENCE PROFESSIONAL AUTHORIZED USER ANNUAL SW SUBSCRIPTION & SUPPORT RENEWAL	3	$ -	$ 648	$ -	$ 3,888
Expert user	IBM COGNOS 8 BUSINESS INTELLIGENCE ADVANCED BUSINESS AUTHOR AUTHORIZED USER LICENSE + SW SUBSCRIPTION & SUPPORT 12 MONTHS	10	$ 1,630	$ -	$ 16,300	$ 16,300
Expert user	IBM COGNOS 8 BUSINESS INTELLIGENCE ADVANCED BUSINESS AUTHOR AUTHORIZED USER ANNUAL SW SUBSCRIPTION & SUPPORT RENEWAL	10	$ -	$ 326	$ -	$ 6,520
Basic user	IBM COGNOS 8 BUSINESS INTELLIGENCE CONSUMER AUTHORIZED USER LICENSE + SW SUBSCRIPTION & SUPPORT 12 MONTHS	85	$ 865	$ -	$ 73,525	$ 73,525
Basic user	IBM COGNOS 8 BUSINESS INTELLIGENCE CONSUMER AUTHORIZED USER ANNUAL SW SUBSCRIPTION & SUPPORT RENEWAL	85	$ -	$ 173	$ -	$ 29,410
Dev environment	IBM COGNOS 8 BUSINESS INTELLIGENCE FOR NON-PRODUCTION ENVIRONMENT PROCESSOR VALUE UNIT (PVU) LICENSE + SW SUBSCRIPTION & SUPPORT 12 MONTHS	200	$ 338	$ -	$ 67,600	$ 67,600
Dev environment	IBM COGNOS 8 BUSINESS INTELLIGENCE FOR NON-PRODUCTION ENVIRONMENT PROCESSOR VALUE UNIT (PVU) ANNUAL SW SUBSCRIPTION & SUPPORT RENEWAL	200	$ -	$ 68	$ -	$ 27,000
Test environment	IBM COGNOS 8 BUSINESS INTELLIGENCE FOR NON-PRODUCTION ENVIRONMENT PROCESSOR VALUE UNIT (PVU) LICENSE + SW SUBSCRIPTION & SUPPORT 12 MONTHS	100	$ 338	$ -	$ 33,800	$ 33,800
Test environment	IBM COGNOS 8 BUSINESS INTELLIGENCE FOR NON-PRODUCTION ENVIRONMENT PROCESSOR VALUE UNIT (PVU) ANNUAL SW SUBSCRIPTION & SUPPORT RENEWAL	100	$ -	$ 68	$ -	$ 13,500
Note: assumed dev environment is dual CPU dual core Xeon, test is 1 CPU, PVU/core per IBM is 50				**Totals**	$227,945	$319,063

IBM pricing for medium BI configuration

In the large configuration IBM cost less than the other traditionally-licensed BI products. Based on their license structure and policies, one could infer that they are focused on the larger environments at the expense of the smaller end of the BI market.

User type	Product Component Description	Units	Software Price	Support Price	First Year Cost	3 Year Total
Admin / IT	IBM COGNOS 8 BUSINESS INTELLIGENCE ADMINISTRATOR AUTHORIZED USER LICENSE + SW SUBSCRIPTION & SUPPORT 12 MONTHS	3	$ 13,500	$ -	$ 40,500	$ 40,500
Admin / IT	IBM COGNOS 8 BUSINESS INTELLIGENCE ADMINISTRATOR AUTHORIZED USER ANNUAL SW SUBSCRIPTION & SUPPORT RENEWAL	3	$ -	$ 2,700	$ -	$ 16,200
Professional	IBM COGNOS 8 BUSINESS INTELLIGENCE PROFESSIONAL AUTHORIZED USER LICENSE + SW SUBSCRIPTION & SUPPORT 12 MONTHS	15	$ 3,240	$ -	$ 48,600	$ 48,600
Professional	IBM COGNOS 8 BUSINESS INTELLIGENCE PROFESSIONAL AUTHORIZED USER ANNUAL SW SUBSCRIPTION & SUPPORT RENEWAL	15	$ -	$ 648	$ -	$ 19,440
Expert user	IBM COGNOS 8 BUSINESS INTELLIGENCE ADVANCED BUSINESS AUTHOR AUTHORIZED USER LICENSE + SW SUBSCRIPTION & SUPPORT 12 MONTHS	50	$ 1,630	$ -	$ 81,500	$ 81,500
Expert user	IBM COGNOS 8 BUSINESS INTELLIGENCE ADVANCED BUSINESS AUTHOR AUTHORIZED USER ANNUAL SW SUBSCRIPTION & SUPPORT RENEWAL	50	$ -	$ 326	$ -	$ 32,600
Basic user	IBM COGNOS 8 BUSINESS INTELLIGENCE CONSUMER AUTHORIZED USER LICENSE + SW SUBSCRIPTION & SUPPORT 12 MONTHS	432	$ 865	$ -	$373,680	$373,680
Basic user	IBM COGNOS 8 BUSINESS INTELLIGENCE CONSUMER AUTHORIZED USER ANNUAL SW SUBSCRIPTION & SUPPORT RENEWAL	432	$ -	$ 173	$ -	$149,472
Dev environment	IBM COGNOS 8 BUSINESS INTELLIGENCE FOR NON-PRODUCTION ENVIRONMENT PROCESSOR VALUE UNIT (PVU) LICENSE + SW SUBSCRIPTION & SUPPORT 12 MONTHS	200	$ 338	$ -	$ 67,600	$ 67,600
Dev environment	IBM COGNOS 8 BUSINESS INTELLIGENCE FOR NON-PRODUCTION ENVIRONMENT PROCESSOR VALUE UNIT (PVU) ANNUAL SW SUBSCRIPTION & SUPPORT RENEWAL	200	$ -	$ 68	$ -	$ 27,000
Test environment	IBM COGNOS 8 BUSINESS INTELLIGENCE FOR NON-PRODUCTION ENVIRONMENT PROCESSOR VALUE UNIT (PVU) LICENSE + SW SUBSCRIPTION & SUPPORT 12 MONTHS	200	$ 338	$ -	$ 67,600	$ 67,600
Test environment	IBM COGNOS 8 BUSINESS INTELLIGENCE FOR NON-PRODUCTION ENVIRONMENT PROCESSOR VALUE UNIT (PVU) ANNUAL SW SUBSCRIPTION & SUPPORT RENEWAL	200	$ -	$ 68	$ -	$ 27,000
Note: assumed dev environment is dual CPU dual core Xeon, test is 1 CPU, PVU/core per IBM is 50				**Totals**	$679,480	$951,192

IBM pricing for large BI configuration

MicroStrategy: Reporting Suite and MicroStrategy 9

The small configuration for MicroStrategy qualifies for the MicroStrategy Reporting Suite. The licensing for this edition is free for the first 100 named users, making it a direct challenger to the open source BI offerings on the market. The support cost is also very low, making it attractive for entry level BI environments just getting started.

The costs shown are higher than just the support cost because in our configuration there are a few components needed to meet our core feature requirements and these need additional licenses. Another factor is the limit of Reporting Suite to a single core (not a single CPU), which severely limits the usability of the product. Buying support and additional licenses permits an additional core and an additional server for one of MicroStrategy's server components, allowing a reasonable departmental server configuration.

Component requirements and limitations are the reason it's important to ensure that any BI configuration you are looking at has the core features you need.

User type	Product Component Description	Units	Software Price	Support Price	First Year Cost	3 Year Total
Base license	Standard Technical Support, Reporting Suite, 25 users	1	$ -	$ 5,000	$ 5,000	$ 15,000
Admin / IT	*covered in line 1*	1	$ -	$ -	$ -	$ -
Professional	*covered in line 1*	1	$ -	$ -	$ -	$ -
Expert user	MicroStrategy Report Services Option	3	$ 400	$ 88	$ 1,464	$ 1,992
Expert user	MicroStrategy Web Analyst Option	3	$ 300	$ 66	$ 1,098	$ 1,494
Basic user	MicroStrategy Report Services Option	20	$ 400	$ 88	$ 9,760	$ 13,280
Dev environment	*Named user licenses have access to dev/test*	1	$ -	$ -	$ -	$ -
Test environment	n/a	0	$ -	$ -	$ -	$ -
				Totals	$ 17,322	$ 31,766

MicroStrategy pricing for small BI configuration

Our medium configuration also qualifies for MicroStrategy Reporting Suite, however the CPU limitations make it unreasonable to consider for a 100 user environment. The enterprise licensing is used for the configuration (shown in the table below). This is the reason for the large price increase over the entry-level configuration.

The jump in cost demonstrates one of the problems with entry-level and SMB configurations for enterprise software: the costs sometimes don't scale up as users are added. This creates a large increase when moving to enterprise edition licenses.

User type	Product Component Description	Units	Software Price	Support Price	First Year Cost	3 Year Total
Admin / IT	MicroStrategy Architect *(included)*	2	$ -	$ -	$ -	$ -
Admin / IT	MicroStrategy Desktop Analyst Module *(included)*	2	$ -	$ -	$ -	$ -
Admin / IT	MicroStrategy Desktop Designer Option *(included)*	2	$ -	$ -	$ -	$ -
Admin / IT	MicroStrategy Intelligence Server Module	2	$ 300	$ 66	$ 732	$ 996
Admin / IT	Microstrategy Intelligence Server Universal Option	2	$ 300	$ 66	$ 732	$ 996
Admin / IT	MicroStrategy Report Services Option	2	$ 400	$ 88	$ 976	$ 1,328
Admin / IT	MicroStrategy Web Analyst Option	2	$ 300	$ 66	$ 732	$ 996
Admin / IT	MicroStrategy Web Professional Option	2	$ 300	$ 66	$ 732	$ 996
Admin / IT	MicroStrategy Web Reporter Module	2	$ 300	$ 66	$ 732	$ 996
Admin / IT	MicroStrategy Web Universal Option	2	$ 250	$ 55	$ 610	$ 830
Professional	MicroStrategy Desktop	3	2000	$ 440	$ 7,320	$ 9,960
Professional	MicroStrategy Intelligence Server Module	3	$ 300	$ 66	$ 1,098	$ 1,494
Professional	Microstrategy Intelligence Server Universal Option	3	$ 300	$ 66	$ 1,098	$ 1,494
Professional	MicroStrategy Report Services Option	3	$ 400	$ 88	$ 1,464	$ 1,992
Professional	MicroStrategy Web Analyst Option	3	$ 300	$ 66	$ 1,098	$ 1,494
Professional	MicroStrategy Web Professional Option	3	$ 300	$ 66	$ 1,098	$ 1,494
Professional	MicroStrategy Web Reporter Module	3	$ 300	$ 66	$ 1,098	$ 1,494
Professional	MicroStrategy Web Universal Option	3	$ 250	$ 55	$ 915	$ 1,245
Expert user	MicroStrategy Intelligence Server Module	10	$ 300	$ 66	$ 3,660	$ 4,980
Expert user	Microstrategy Intelligence Server Universal Option	10	$ 300	$ 66	$ 3,660	$ 4,980
Expert user	MicroStrategy Report Services Option	10	$ 400	$ 88	$ 4,880	$ 6,640
Expert user	MicroStrategy Web Analyst Option	10	$ 300	$ 66	$ 3,660	$ 4,980
Expert user	MicroStrategy Web Reporter Module	10	$ 300	$ 66	$ 3,660	$ 4,980
Expert user	MicroStrategy Web Universal Option	10	$ 250	$ 55	$ 3,050	$ 4,150
Basic user	MicroStrategy Intelligence Server Module	85	$ 300	$ 66	$ 31,110	$ 42,330
Basic user	Microstrategy Intelligence Server Universal Option	85	$ 300	$ 66	$ 31,110	$ 42,330
Basic user	MicroStrategy Web Reporter Module	85	$ 300	$ 66	$ 31,110	$ 42,330
Basic user	MicroStrategy Report Services Option	85	$ 400	$ 88	$ 41,480	$ 56,440
Basic user	MicroStrategy Web Universal Option	85	$ 250	$ 55	$ 25,925	$ 35,275
Dev environment	MicroStrategy Object Manager Unlimited Intelligence Server Named Users	1	7500	$ 1,650	$ 9,150	$ 12,450
Dev environment	*Named user licenses have access to dev/test*	2	$ -	$ -	$ -	$ -
Test environment	*Named user licenses have access to dev/test*	3	$ -	$ -	$ -	$ -
				Totals	$ 212,890	$ 289,670

MicroStrategy pricing for medium BI configuration

The large configuration uses standard enterprise pricing.

User type	Product Component Description	Units	Software Price	Support Price	First Year Cost	3 Year Total
Admin / IT	MicroStrategy Architect *(included)*	2	$ -	$ -	$ -	$ -
Admin / IT	MicroStrategy Desktop Analyst Module *(included)*	2	$ -	$ -	$ -	$ -
Admin / IT	MicroStrategy Desktop Designer Option *(included)*	2	$ -	$ -	$ -	$ -
Admin / IT	MicroStrategy Intelligence Server Module	3	$ 300	$ 66	$ 1,098	$ 1,494
Admin / IT	Microstrategy Intelligence Server Universal Option	3	$ 300	$ 66	$ 1,098	$ 1,494
Admin / IT	MicroStrategy Report Services Option	3	$ 400	$ 88	$ 1,464	$ 1,992
Admin / IT	MicroStrategy Web Analyst Option	3	$ 300	$ 66	$ 1,098	$ 1,494
Admin / IT	MicroStrategy Web Professional Option	3	$ 300	$ 66	$ 1,098	$ 1,494
Admin / IT	MicroStrategy Web Reporter Module	3	$ 300	$ 66	$ 1,098	$ 1,494
Admin / IT	MicroStrategy Web Universal Option	3	$ 250	$ 55	$ 915	$ 1,245
Professional	MicroStrategy Desktop	15	2000	$ 440	$ 36,600	$ 49,800
Professional	MicroStrategy Intelligence Server Module	15	$ 300	$ 66	$ 5,490	$ 7,470
Professional	Microstrategy Intelligence Server Universal Option	15	$ 300	$ 66	$ 5,490	$ 7,470
Professional	MicroStrategy Report Services Option	15	$ 400	$ 88	$ 7,320	$ 9,960
Professional	MicroStrategy Web Analyst Option	15	$ 300	$ 66	$ 5,490	$ 7,470
Professional	MicroStrategy Web Professional Option	15	$ 300	$ 66	$ 5,490	$ 7,470
Professional	MicroStrategy Web Reporter Module	15	$ 300	$ 66	$ 5,490	$ 7,470
Professional	MicroStrategy Web Universal Option	15	$ 250	$ 55	$ 4,575	$ 6,225
Expert user	MicroStrategy Intelligence Server Module	50	$ 300	$ 66	$ 18,300	$ 24,900
Expert user	Microstrategy Intelligence Server Universal Option	50	$ 300	$ 66	$ 18,300	$ 24,900
Expert user	MicroStrategy Report Services Option	50	$ 400	$ 88	$ 24,400	$ 33,200
Expert user	MicroStrategy Web Analyst Option	50	$ 300	$ 66	$ 18,300	$ 24,900
Expert user	MicroStrategy Web Reporter Module	50	$ 300	$ 66	$ 18,300	$ 24,900
Expert user	MicroStrategy Web Universal Option	50	$ 250	$ 55	$ 15,250	$ 20,750
Basic user	MicroStrategy Intelligence Server Module	432	$ 300	$ 66	$ 158,112	$ 215,136
Basic user	Microstrategy Intelligence Server Universal Option	432	$ 300	$ 66	$ 158,112	$ 215,136
Basic user	MicroStrategy Web Reporter Module	432	$ 300	$ 66	$ 158,112	$ 215,136
Basic user	MicroStrategy Report Services Option	432	$ 400	$ 88	$ 210,816	$ 286,848
Basic user	MicroStrategy Web Universal Option	432	$ 250	$ 55	$ 131,760	$ 179,280
Dev environment	MicroStrategy Object Manager Unlimited Intelligence Server Named Users	1	15000	$ 3,300	$ 18,300	$ 24,900
Dev environment	*Named user licenses have access to dev/test*	2	$ -	$ -	$ -	$ -
Test environment	*Named user licenses have access to dev/test*	3	$ -	$ -	$ -	$ -
				Totals	$ 1,031,876	$ 1,404,028

MicroStrategy pricing for large BI configuration

Oracle: Oracle Business Intelligence SE1 and EE+

For the small configuration we were able to take advantage of Oracle's Business Intelligence Standard Edition One, a BI edition for less than 50 users. This edition includes a copy of the Oracle database and Oracle Warehouse Builder but it is limited to 2 CPUs and OWB is constrained to the local database as a target. This makes it unrealistic for a full data warehouse environment but it remains suitable for the BI component.

User type	Product Component Description	Units	Software Price	Support Price	First Year Cost	3 Year Total
Admin / IT	Server Administrator	1	$ 5,800	$ 1,276	$ 7,076	$ 9,628
Admin / IT	Standard Edition One	1	$ 1,200	$ 264	$ 1,464	$ 1,992
Professional	Standard Edition One	1	$ 1,200	$ 264	$ 1,464	$ 1,992
Expert user	Standard Edition One	3	$ 1,200	$ 264	$ 4,392	$ 5,976
Basic user	Standard Edition One	20	$ 1,200	$ 264	$ 29,280	$ 39,840
Dev environment	Server Administrator	1	$ 5,800	$ 1,276	$ 7,076	$ 9,628
Dev environment	Standard Edition One	2	$ 1,200	$ 264	$ 2,928	$ 3,984
Test environment	0	0	$ -	$ -	$ -	$ -
				Totals	$ 53,680	$ 73,040

Oracle pricing for small BI configuration

The medium and large configurations both use Oracle Business Intelligence Suite Enterprise Edition Plus. Oracle charges for non-production use. The combination of higher per-user prices and the charge for development and test environments increased the cost of Oracle for the larger configurations.

User type	Product Component Description	Units	Software Price	Support Price	First Year Cost	3 Year Total
Admin / IT	Server Administrator	2	$ 5,800	$ 1,276	$ 14,152	$ 19,256
Admin / IT	Oracle BI Suite Enterprise Edition Pl	2	$ 2,000	$ 440	$ 4,880	$ 6,640
Professional	Oracle BI Suite Enterprise Edition Pl	3	$ 2,000	$ 440	$ 7,320	$ 9,960
Expert user	Oracle BI Suite Enterprise Edition Pl	10	$ 2,000	$ 440	$ 24,400	$ 33,200
Basic user	Oracle BI Suite Enterprise Edition Pl	85	$ 2,000	$ 440	$ 207,400	$ 282,200
Dev environment	Server Administrator	2	$ 5,800	$ 1,276	$ 14,152	$ 19,256
Dev environment	Oracle BI Suite Enterprise Edition Pl	5	$ 2,000	$ 440	$ 12,200	$ 16,600
Test environment	Server Administrator	2	$ 5,800	$ 1,276	$ 14,152	$ 19,256
Test environment	Oracle BI Suite Enterprise Edition Pl	5	$ 2,000	$ 440	$ 12,200	$ 16,600
				Totals	$ 310,856	$ 422,968

Oracle pricing for medium BI configuration

The large configuration uses the same OBIEE+ edition.

User type	Product Component Description	Units	Software Price	Support Price	First Year Cost	3 Year Total
Admin / IT	Server Administrator	3	$ 5,800	$ 1,276	$ 21,228	$ 28,884
Admin / IT	Oracle BI Suite Enterprise Edition Pl	3	$ 2,000	$ 440	$ 7,320	$ 9,960
Professional	Oracle BI Suite Enterprise Edition Pl	15	$ 2,000	$ 440	$ 36,600	$ 49,800
Expert user	Oracle BI Suite Enterprise Edition Pl	50	$ 2,000	$ 440	$ 122,000	$ 166,000
Basic user	Oracle BI Suite Enterprise Edition Pl	432	$ 2,000	$ 440	$ 1,054,080	$ 1,434,240
Dev environment	Server Administrator	3	$ 5,800	$ 1,276	$ 21,228	$ 28,884
Dev environment	Oracle BI Suite Enterprise Edition Pl	18	$ 2,000	$ 440	$ 43,920	$ 59,760
Test environment	Server Administrator	3	$ 5,800	$ 1,276	$ 21,228	$ 28,884
Test environment	Oracle BI Suite Enterprise Edition Pl	18	$ 2,000	$ 440	$ 43,920	$ 59,760
				Totals	$ 1,371,524	$ 1,866,172

Oracle pricing for large BI configuration

Pentaho: Pentaho BI Suite

Pentaho provides software under a subscription license, with the primary factor being the number of users. For the small configuration we used the "Silver" level, which imposes a restriction of no more than 25 users. Like other BI vendors, this is an entry-level license meaning it's designed primarily for the SMB and starter market.

User type	Product Component Description	Units	Software Price	Support Price	First Year Cost	3 Year Total
Support	Pentaho Silver edition	1	$ -	$ 10,000	$ 10,000	$ 30,000
Admin / IT	*covered in line 1*	1	$ -	$ -	$ -	$ -
Professional	*covered in line 1*	1	$ -	$ -	$ -	$ -
Expert user	*covered in line 1*	3	$ -	$ -	$ -	$ -
Basic user	*covered in line 1*	20	$ -	$ -	$ -	$ -
Dev environment	*no charge*	1	$ -	$ -	$ -	$ -
Test environment	0	0	$ -	$ -	$ -	$ -
				Totals	$ 10,000	$ 30,000

Pentaho pricing for small BI configuration

The medium configuration uses a "Gold" Pentaho Enterprise Edition subscription. These are unlimited user licenses priced by CPU band. For our configuration this places an upper limit of 6 CPUs (not cores, so multi-core CPUs can be used). For both the medium and large configuration we were therefore able to use the first tier since the server could contain up to 24 cores.

User type	Product Component Description	Units	Software Price	Support Price	First Year Cost	3 Year Total
Support	Pentaho Gold edition	1	$ -	$ 29,000	$ 29,000	$ 87,000
Admin / IT	*covered in line 1*	2	$ -	$ -	$ -	$ -
Professional	*covered in line 1*	3	$ -	$ -	$ -	$ -
Expert user	*covered in line 1*	10	$ -	$ -	$ -	$ -
Basic user	*covered in line 1*	85	$ -	$ -	$ -	$ -
Dev environment	*no charge*	2	$ -	$ -	$ -	$ -
Test environment	*no charge*	3	$ -	$ -	$ -	$ -
				Totals	$ 29,000	$ 87,000

Pentaho pricing for medium BI configuration

User type	Product Component Description	Units	Software Price	Support Price	First Year Cost	3 Year Total
Support	Pentaho Gold edition	1	$ -	$ 29,000	$ 29,000	$ 87,000
Admin / IT	*covered in line 1*	2	$ -	$ -	$ -	$ -
Professional	*covered in line 1*	15	$ -	$ -	$ -	$ -
Expert user	*covered in line 1*	50	$ -	$ -	$ -	$ -
Basic user	*covered in line 1*	432	$ -	$ -	$ -	$ -
Dev environment	*no charge*	2	$ -	$ -	$ -	$ -
Test environment	*no charge*	3	$ -	$ -	$ -	$ -
				Totals	$ 29,000	$ 87,000

Pentaho pricing for large BI configuration

SAP: BusinessObjects Edge and Enterprise Professional

The small configuration qualified for the SAP Business Objects Edge edition which includes all relevant functionality and enough licenses of admin and professional developer components that no additional licenses were required. The Edge edition is limited to a single server but the server size is not limited as it is with similar editions of MicroStrategy and Oracle.

User type	Product Component Description	Units	Software Price	Support Price	First Year Cost	3 Year Total
Base license	Business Objects Edge 3.1 Standard 10 NUL	3	$ 36,000	$ 7,920	$ 43,920	$ 59,760
Admin / IT	*1 dev license per 10 NULs, covered in line 1*	1	$ -	$ -	$ -	$ -
Professional	*1 dev license per 10 NULs, covered in line 1*	1	$ -	$ -	$ -	$ -
Expert user	*1 dev license per 10 NULs, covered in line 1*	3	$ -	$ -	$ -	$ -
Basic user	*covered in line 1*	20	$ -	$ -	$ -	$ -
Dev environment	*Named user licenses have access to dev/test*	1	$ -	$ -	$ -	$ -
Test environment	*Named user licenses have access to dev/test*	0	$ -	$ -	$ -	$ -
				Totals	$ 43,920	$ 59,760

SAP pricing for small BI configuration

The Edge packaging made SAP more competitive for the small and medium configurations even though both Pentaho's and MicroStrategy's base licenses were free and only a few add-on components added to the cost of MicroStrategy. This made SAP the lowest cost traditional vendor for the medium configuration.

User type	Product Component Description	Units	Software Price	Support Price	First Year Cost	3 Year Total
Base license	Business Objects Edge 3.1 Standard 10 NUL	10	$ 12,000	$ 2,640	$ 146,400	$ 199,200
Admin / IT	SAP BusinessObjects Xcelsius Enterprise Named User	2	$ 1,220	$ 268	$ 2,977	$ 4,050
Professional	SAP BusinessObjects Xcelsius Enterprise Named User	3	$ 1,220	$ 268	$ 4,465	$ 6,076
Expert user	*1 dev license per 10 NULs, covered in line 1*	10	$ -	$ -	$ -	$ -
Basic user	*covered in line 1*	85	$ -	$ -	$ -	$ -
Dev environment	*Named user licenses have access to dev/test*	3	$ -	$ -	$ -	$ -
Test environment	*Named user licenses have access to dev/test*	3	$ -	$ -	$ -	$ -
				Totals	$ 153,842	$ 209,326

SAP pricing for medium BI configuration

The large configuration required enterprise licensing, as with all the other vendors. SAP changed their pricing policy and no longer charges for non-production environments, making them more competitive with enterprise licensing.

User type	Product Component Description	Units	Software Price	Support Price	First Year Cost	3 Year Total
Admin / IT	SAP BusinessObjects Enterprise Prof. QRA Named User	3	$ 1,250	$ 275	$ 4,575	$ 6,225
Admin / IT	SAP BusinessObjects Desktop Intelligence Named User	3	$ 1,130	$ 249	$ 4,136	$ 5,627
Admin / IT	SAP BusinessObjects Xcelsius Enterprise Named User	3	$ 1,220	$ 268	$ 4,465	$ 6,076
Admin / IT	SAP BusinessObjects Web Intelligence Named User	3	$ 1,130	$ 249	$ 4,136	$ 5,627
Professional	SAP BusinessObjects Enterprise Prof. QRA Named User	15	$ 1,250	$ 275	$ 22,875	$ 31,125
Professional	SAP BusinessObjects Xcelsius Enterprise Named User	15	$ 1,220	$ 268	$ 22,326	$ 30,378
Professional	SAP BusinessObjects Web Intelligence Named User	15	$ 1,130	$ 249	$ 20,679	$ 28,137
Expert user	SAP BusinessObjects Enterprise Prof. QRA Named User	50	$ 1,250	$ 275	$ 76,250	$ 103,750
Expert user	SAP BusinessObjects Xcelsius Enterprise Named User	50	$ 1,220	$ 268	$ 74,420	$ 101,260
Expert user	SAP BusinessObjects Web Intelligence Named User	50	$ 1,130	$ 249	$ 68,930	$ 93,790
Basic user	SAP BusinessObjects Enterprise Prof. QRA Named User	432	$ 1,250	$ 275	$ 658,800	$ 896,400
Basic user	SAP BusinessObjects Xcelsius Enterprise Interactive Viewing NUL	432	$ 570	$ 125	$ 300,413	$ 408,758
Basic user	SAP BusinessObjects Web Intelligence Interactive Viewing NUL	432	$ 570	$ 125	$ 300,413	$ 408,758
Dev environment	*Named user licenses have access to dev/test*	3	$ -	$ -	$ -	$ -
Test environment	*Named user licenses have access to dev/test*	15	$ -	$ -	$ -	$ -
				Totals	$ 1,562,417	$ 2,125,912

SAP pricing for large BI configuration

About the Author

Mark Madsen is a research analyst focused on information management, BI and analytics. Mark is an award-winning architect and former CTO whose work has been featured in numerous industry publications. He is an international speaker and manages the open source channel at the Business Intelligence Network. For more information or to contact Mark, visit http://ThirdNature.net.

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