

## CORPORATE SUMMARY

### **Why taking a Total Cost of Ownership approach?**

When investing in an Enterprise Business Intelligence Platform, managers often take into account just the cost of that solution as negotiated with a certain vendor, and disregard the fact that the chosen option will imply other associated costs. Besides the investment in software and hardware, a substantial funding is needed to deploy and maintain the solution. This can be done either by company employees or external consultants or service providers. The total cost of an Enterprise Business Intelligence Platform must be, then, considered as a sum of two factors: the cost of acquisition of the solution, and the cost of deploying and operating that solution. All these costs of deploying and operating the solution result in what is considered in this study as the Total Cost of Ownership of the Enterprise Business Intelligence Platform. Important as they are, these costs have not been clearly identified until now, nor have they been traditionally taken into account in the choice of a certain provider of Enterprise Business Intelligence Platforms, despite the fact that the Total Cost of Ownership does differ significantly from vendor to vendor.

Regarding this particular study, the diverse parameters considered as cost drivers for the Total Cost of Ownership of the Enterprise Business Intelligence Platform were determined in terms of man-hours, and the values were populated using direct phone interviews with managers of important European companies in major industries that range from industry to energy to retail and services. The functionalities provided by each vendor's Enterprise Business Intelligence Platform were also taken into consideration when building up the final results for the Total Cost of Ownership for each solution, keeping in mind that the absence of certain abilities from a certain package is in itself a drawback when comparing that offer to another that fully provides the considered ability. That drawback is taken as an additional, hidden cost for the particular offer.

The model to approach the Total Cost of Ownership by Enterprise Business Intelligence Platforms of four main vendors (Business Objects, Cognos, SAP and SAS) was first developed by Oxford SAID Business School, and was finally further enhanced and validated by a consulting team of four HEC MBA finalists acting as consultants. The validation was executed by benchmarking the model in over 100 telephone interviews with managers with a significant knowledge of the solution in use in their companies. Due to the fact that the validation of the model is now based on real data, its results provide a much more accurate and statistical representative picture of what is happening in reality. The selected companies ranged all over Europe, and over all industry sectors and reflected the usage of Enterprise Business Intelligence Platforms in the European market.

### **Results of the study**

Regarding the results of the study, the HEC MBA consulting team can confirm the statement previously made by the Oxford SAID MBA consulting team, who considered a relevant relationship between the Total Cost of Ownership associated to Enterprise Business Intelligence Platforms and the total number of users of the implemented solution. One could then be easily led to believe that the Total Cost of Ownership relates directly and only to the number of users of the platform. Surprisingly, however, the number of users alone could not statistically explain the reported costs that the MBA consulting team found half-way during the elaboration of this study. In depth analysis of the interview data showed that important correlations took place between the Total Cost of Ownership of Enterprise Business Intelligence Platforms and the database sizes and number of data

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sources involved in the platform's operation. In fact, in a second survey made on 47 companies, the HEC MBA consulting team observed that there are considerable differences between the amounts of data used by the four different solutions. The best-performing vendor in this field is SAS that had an average database size of 3338 Gigabytes, followed by Business Objects with 1113 Gb and SAP with only 620 Gb. Cognos classifies last in this topic, with an average database size of 355 Gb, almost ten times less than SAS. Also, SAS accesses the largest number of data sources with its own integrated technology. Business Objects, Cognos and SAP have to use third party tools in most cases. It was shown that the Total Cost of Ownership of an Enterprise Business Intelligence Platform is also dependent on the size of the data to be managed and on the number of data sources available. Besides, training costs and frequency of upgrades affect significantly as well the Total Cost of Ownership, just as the level of integration of the whole set of tools pertaining to the Enterprise Business Intelligence Platform considered.

### **Results by grouping the number of users**

Taking the number of users as a starting point for the conclusions, it can be seen that in the lower ranges (1-49 and 50-149 users) Cognos seems to be a best solution in terms of Total Cost of Ownership. Business Objects is also well positioned in these categories although not as good as Cognos, whereas SAS and SAP solutions seem to be more expensive. Although in some cases it is possible to find differences of a factor of two between the cheapest solution (Cognos) and the most expensive one (SAP), the team considered that these positions might change easily in the real world due to the fact that the differences among the various respective positions of the vendors are much lower compared to what happens on the highest range of users (over 500 users). However, this good performance of Cognos in terms of Total Cost of Ownership regards merely small departmental implementations. Only a company with few requirements, simple ETL processes and simple reports might then find Cognos to be a suitable solution. Besides, Cognos has the last place in our rankings in terms of database size and number of data sources managed. Once again this proves Cognos solutions to be only typically used for smaller-sized companies or at department-level. In both cases one can question whether one needs an Enterprise Business Intelligence Platform or just a simple operational reporting tool.

When moving to higher ranges (150-499), quite different behaviors can be detected. Cognos is in this range the one with the highest increase in terms of Total Cost of Ownership, whereas the behavior of the other vendors is more linear. Nevertheless, the four vendors still have small differences among them, although the trend shows a milder increase for SAP and SAS solutions.

In the highest range of users (over 500), the HEC MBA consulting team found only one Cognos sample with 500 users, which did not allow the team to perform any relevant statistic analysis regarding this vendor. With the other vendors, such as Business Objects, the team was able to find several occurrences with more than 500 users, with values ranking from 690 to 5000 users. Therefore, looking at the whole gathered data, and being Cognos the second vendor with more samples overall, the HEC MBA consulting team has yet another reason to believe that Cognos solutions may not be suitable for big implementations. Overall, thus, SAS was found to be the vendor that provides the most complete and scalable Enterprise Business Intelligence Platform and that offers the lowest Total Cost of Ownership when the number of users is high.

In fact, still in the highest range of users, when the three vendors other than SAS are considered, it is clear that Business Objects and SAP have Total Cost of Ownership values that increase almost

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exponentially in relation to the previous range. Business Objects has a higher value than SAP due to the fact that it has a higher average number of users (1,988 users for Business Objects compared to 981 users for SAP). SAS is the only vendor showing an almost linear progression, which indicates that the number of users and the size of applications do not affect the Total Cost of Ownership of their Enterprise Business Intelligence Platform offerings. Therefore, and always having our sample as a reference, the HEC MBA consulting team considers the SAS solutions to be very scalable and robust implementations that are able to support high loads of users without incrementing the Total Cost of Ownership.

### **Important other considerations**

When considering the capabilities of an Enterprise Business Intelligence Platform to access different sources of information, the different vendors do not always rely on their own solution. Even if the sample size to take these conclusions was somewhat more limited, it is however possible to say that this is the case, for instance, of Business Objects, which in 82% of the cases relied on third parties, most commonly Informatica, for ETL processes. In contrast, SAS solutions used only in 22% of the cases third parties, usually ETL tools developed in-house. This is one of the explanations of the higher scalability of SAS solutions compared to other vendors, and once again the vendor SAS is the leader in this study in the amount of data it could handle. It handles up to three times more data than Business Objects (the second best) and ten times more than Cognos. Business Objects proved to be a solution that, like SAS, could manage up to three times more data sources than the vendors Cognos and SAP. It came second after SAS in the amount of data in gigabytes managed by the Enterprise Business Intelligence Platform. However, it must be remembered that Business Objects is using third parties for managing the ETL and database processes. The capability of accessing and using different number of data source systems is mainly influenced by this.

SAP is used mainly to access SAP databases. In fact if there is a need to access more than 10% data sources coming from non-SAP parties SAP recommends the use of another ETL vendor to access and transform the data. Cognos uses in 60% of the studied cases “non-native” ETL tools. For businesses that depend heavily on SAP ERP systems the SAP Enterprise Business Intelligence Platform does not provide the lowest Total Cost of Ownership even when the number of users is low and there are no additional information sources to integrate from third parties. But then again, it is questionable whether one can speak about an Enterprise Business Intelligence Platform if data is only coming from SAP sources and neglect the extensive amount of information that is not managed by SAP. As long as they do not have additional information to integrate coming from non-SAP sources companies that support heavily on SAP ERP systems might find SAP a simple and valid Enterprise Business Intelligence Platform option. SAP was second regarding database size and number of data sources to be managed. In that case one must consider the extremely high costs for consulting lowering considerably the Total Cost of Ownership of a SAP-based Enterprise Business Intelligence Platform.

In terms of cost per gigabyte of information accessed, SAS has the lowest values. The most expensive solution in terms of cost per gigabyte is SAP, which has high ongoing costs and lower amounts of information processed by its Enterprise Business Intelligence Platform.

## Total Cost of Ownership of Enterprise Business Intelligence Platforms

It is clear in the study that the ability to manage higher number of data sources natively (without requiring third-party add-ons) and lower values for cost per gigabyte translate finally into lower values for the Total Cost of Ownership of the Enterprise Business Intelligence Platform.

Business Objects has high average training costs that seem to be associated to the frequent upgrades and acquisitions performed by this company during the last years. The HEC MBA consulting team has found a strong exponential relationship, not found in other vendors, between the training costs and the number of users, thus affecting the Total Cost of Ownership of the Enterprise Business Intelligence Platform.

### **Conclusion**

In case IT managers foresee serious changes of their business model data and metadata integration are a key factor in the choice of Enterprise Business Intelligence Platforms. If this is the case, integration is a key factor. Otherwise, the Total Cost of Ownership might increase considerably. Thus, only Enterprise Business Intelligence Platforms that excel in integration of all BI components should be considered. Yet again SAS proves to be the number one option.

**The key message of this report is that IT managers and CIO's must have a long term view when deciding upon investments in Enterprise Business Intelligence Platforms, and that the Total Cost of Ownership is a valid concept to benchmark Enterprise Business Intelligence Platforms. Taken as a whole, the SAS offer includes the most complete and scalable Enterprise Business Intelligence Platform with the overall lowest Total Cost of Ownership**

With this report, the HEC MBA consulting team considers to have provided a new, auxiliary and structured perspective on how to evaluate the choice of a certain Enterprise Business Intelligence Platform from four main Business Intelligence providers. The team also believes that the relevance of the Total Cost of Ownership has been clearly highlighted as a valid and necessary benchmarking tool to make the right choice for an Enterprise Business Intelligence Platform provider.

Paris, 14 June 2006

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