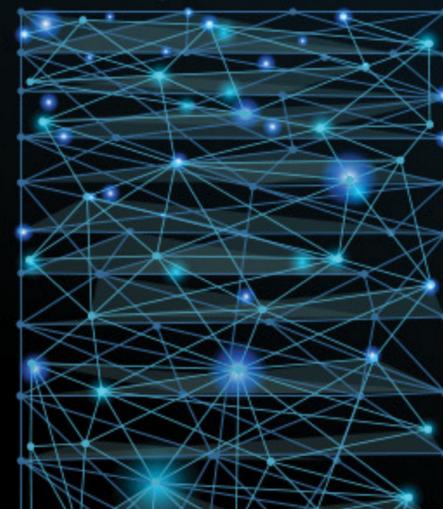




THE REAL COST FACTORS of Embedded Analytics



INTRODUCTION

Embedded analytics has become a mandatory element of any business strategy to improve competitive advantage and drive better business performance. As organizations strive to give customers more analytical insights from their product or service, it is becoming clear that the costs and complexity of embedding analytics extend beyond the initial software license acquisition.

The obvious way to view Business Analytics (BA) costs looks something like this: more software licenses for more people equals more money. In fact, licenses are commonly used as a red herring in BA pricing models for embedded analytics, but they turn out to be only a small part of the total cost. The greater impact on BA total cost of ownership (TCO) generally comes from fundamental software and hardware infrastructure choices, professional services, integration costs and, most of all, human capital.

Buyers of data analytics for embedded solutions have the opportunity to select a technology that minimizes staffing efforts and, consequently, reduces overall costs. The typical purchasing department concentrates on the initial BA acquisition costs of a software license because these costs are often more immediate and easier to measure. It is critical to keep in mind that Gartner estimates that 92% of the money customers spend on BA applications is spent after the initial deployment, on such items as staffing, integrations and maintenance.



LICENSE COSTS

Although license costs tend to be a small percentage of an entire embedded analytics project, this tends to be where a customer's procurement team and a vendor's sales team focus most.

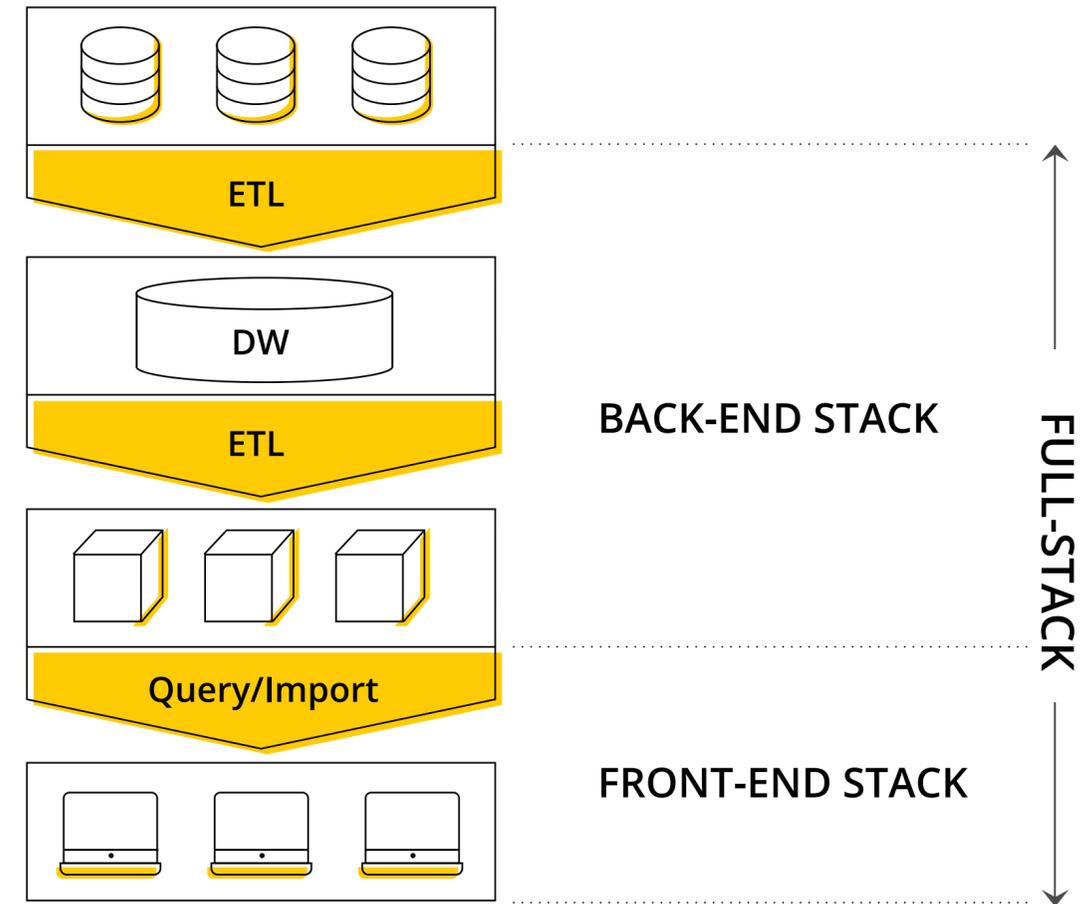
Many BA vendors have complex licensing models that may or may not include upgrades and have role-based licenses or strict per-user restrictions that are easy to exceed as employees come and go. The first rule of thumb is to ensure that you are well versed on the exact terms of the licenses you are purchasing. It is not unusual to find that the "full BA suite" that was demoed is not included in the base price you are quoted. Optional modules that you may have assumed were standard may not actually be included, and so on. Make sure to review what is and, more important, is not included in the initial acquisition.

INTEGRATION COSTS — FULL STACK VERSUS COMPONENTS

When evaluating the full TCO for embedded BA, it is important to take a full-stack view of the solution. Business analytics software can be broken down into two components that, when integrated effectively, offer a full embedded solution. Most vendors tend to focus on either a front-end or a back-end solution, but today there are industry leaders that provide a full-stack solution as well.

BACK-END SOFTWARE STACKS:

Provide only back-end functionality, like data storage, transformation and management (i.e., data warehouse and data mart functionality, ETL capabilities).



FRONT-END SOFTWARE STACKS:

Provide only front-end (end-user-facing) functionality, such as data visualization, data discovery and visual analysis.

FULL SOFTWARE STACKS:

Software stacks that deliver both back-end and front-end functionalities.

In most cases, implementing only a back-end stack or a front-end stack would not suffice to ensure a real, effective and scalable business analytics solution. When determining the TCO for embedded analytics, you'll need to consider not only your preference for partial- or full-stack breakdown of your configuration but also the integration costs of that choice.

MULTIPLE PRODUCTS FROM A SINGLE VENDOR:

Many of the leading products in the market are the result of corporate acquisitions, mergers and product integrations.

When a company integrates several products that have been bundled together to provide a full suite of services, the result is often overlapping, mismatched software suites that lack a seamless user experience. Often users are required to purchase licenses for each product individually. Not only is this cumbersome to purchase and manage, but it also increases the likelihood that the products will not be streamlined and integrated sufficiently to provide a single point of knowledge.

MULTIPLE PRODUCTS FROM MULTIPLE VENDORS:

You may decide to go with what is sometimes considered a “best of breed” solution and select vendors that choose to focus on part of the BA stack. These solutions tend to have a lower user license cost, but integrating between nonrelated tools is notoriously difficult, especially if it includes integrated tools that were not originally designed to be integrated. Add the integration costs to the costs of licenses and the time and hassle of dealing with multiple support desks and multiple training tracks, and the overall TCO can easily skyrocket.

INTEGRATED PRODUCTS:

Selecting a platform that was conceived and designed as an integrated product and receives ongoing unified maintenance is guaranteed to simplify things and reduce TCO. Designed to work with seamless interoperability, integrated interfaces and coordinated, single-point support, an integrated product will be simpler, more affordable, fully integrated and easier to implement.

SUBSCRIPTION VERSUS PERPETUAL

Traditionally, on-premises software was sold perpetually and Software-as-a-Service software was sold as a subscription, but today almost every software package is available as either a subscription or a perpetual purchase. Choosing between pricing models can be daunting.

Some characteristics of subscription that make it appealing to many customers include:

- Lower upfront cost
- Annual renewals, which encourage the software provider to demonstrate ongoing value and build a relationship with the customer
- Annual renewals also mean less commitment for the long term, which may make budgeting decisions easier
- Generally include support and maintenance costs built into the annual cost
- Minor and major upgrades are generally included in the annual cost

It is important to keep in mind that subscription models may not be an option for some highly regulated industries. Not all vendors cover all regulatory requirements, from data protection to user security and access.

Perpetual license models become more attractive when looking at the long-term costs. Subscription models break even somewhere between three and four years, at which point a perpetual license becomes less expensive.

Other factors to consider with a perpetual license include:

- Often includes additional mandatory fee of 18% to 20% of the initial purchase price for support, releases and upgrades
- Mandatory maintenance and upgrade contracts often have restrictions that limit the number of major upgrades
- Gain peace of mind knowing the software is sitting on your servers, under your control
- It is comforting to know that the investment was made on a platform that isn't going anywhere anytime soon

HARDWARE

Depending on the capacity needs of your embedded analytics requirements, you'll need to select the appropriate hardware platform that will be able to scale when data sets or user load grows beyond your initial expectations. The three types of hardware platform configurations used for BA are:

COMMODITY HARDWARE:

Commodity hardware is described as the hardware available with an average amount of computing resources; it is not considered a "luxury car" in its field. Commodity hardware does not imply low quality but rather affordability.

Today's advanced BA technologies are now being designed to work on 64-bit commodity machines. By using modern chipsets to their fullest potential, it is now possible to run queries on terabytes of data for hundreds of users on just one of today's commodity hardware boxes.

PROPRIETARY HARDWARE:

Some BA software is designed to work on proprietary hardware only. Proprietary hardware is a separate and discrete hardware device with integrated software (firmware) specifically designed to provide a particular computing resource. Proprietary hardware is not designed to allow the customers to change the software or flexibly reconfigure the hardware. Almost by definition, proprietary hardware is significantly more expensive than commodity hardware, but it is also able to handle more capacity.

DISTRIBUTED DATABASES:

When data sizes get too large, a distributed database may be the best solution. A distributed database may be stored in multiple computers located in the same physical location or may be dispersed over a network of interconnected computers. A distributed database system consists of loosely coupled sites that share no physical components (such as disk, RAM and CPU). The cost of a distributed database is generally less than that of proprietary hardware, as the resources and cost may be shared with others in the database farm.

Here is a summary of hardware choices:

	Commodity Hardware	Proprietary Hardware	Distributed Databases
Hardware Class	Commodity	Proprietary	Commodity
Best Architecture	1 server	1 server	Unlimited servers
Capacity	Terabytes	Terabytes	Petabytes
Hardware Costs	4-5 figures	6-7 figures	5-6 figures

PROFESSIONAL SERVICES

Ideally, an organization will be able to utilize an existing in-house technical team to plan, launch and maintain its embedded analytics solution. With user-friendly, low-maintenance and self-serve BA tools, a standard technical team without specialized skill sets should be able to handle this additional load.

When solutions get more complex, hardware more expensive and integrations more demanding, you may find yourself incurring additional costs above and beyond the anticipated cost of hardware, software and infrastructure. When you outgrow your own technical team's abilities and capacity, you have two alternatives, both costly and challenging: hire specialized professionals to join your organization or outsource the project to BA consultants who offer a full range of IT and professional consulting.

Unfortunately, the pool of BA experts with the right mix of statistical and mathematical knowledge, a deep understanding of business processes, and industry knowledge is limited. If you are lucky enough to find one of these gems, he or she will likely become the bottleneck with all project requests, improvements and adjustments that need to funnel through that resource.

With the limited pool of qualified BA experts available, outsourcing BA professional services has become a popular alternative even though it tends to be more expensive, creates an even bigger bottleneck and decreases an organization's level of control. There is often no other alternative but to give the reins to a team of BA professionals who manage these projects remotely. Although the initial price quote for outsourcing these professional services may seem cheaper in the short run, it is not in these consultants' best interests to make you independent of their platform when you will no longer need their services and thus pay their fees. If you choose to purchase professional services directly from a vendor, be sure to understand your contractual obligations and make clear their delivery requirements.

SELF-SERVICE ALTERNATIVES

A growing trend in the BA industry is the self-service BA concept. BA vendors understand that SMB and Enterprise customers alike are looking for tools with improved user interfaces and friendlier UIs that will allow wider adoption and impact of data analytics. As BA tools get easier to implement and utilize, the percentage of companies effectively embedding BA will grow, and the tools you can offer your customers to do their own analytics will grow with it.

HUMAN CAPITAL

As discussed, the largest cost component over the analytics lifetime is skilled personnel. IDC estimates that ongoing staffing costs constitute 60%-86% of owning enterprise BA software over a three-year period, while hardware and software each represent only 7%.

IN-HOUSE VERSUS OUTSOURCED

One of the common problems typical business analytics solutions suffer from is their heavy reliance on IT involvement to set up and maintain data warehousing and OLAP cubes and even create and customize reports. The IT department quickly becomes a bottleneck, and just as quickly, the effectiveness of the BA solution you paid so much for becomes reliant on your adding more IT people to tend to requests.

Some companies are turning to hosted BA solutions which are hosted IT departments with an arsenal of homemade or third-party software. This alternative may be a viable solution and save some recruitment dollars if your solution is not very complicated. Though they save money on head count, hosted BA solutions will probably not solve the IT bottleneck; an IT department located in a different city or country will not be as responsive as the in-house alternative.

COMPLEXITY OF TECHNOLOGY

It is not of great insight to say that the complexity of your BA solution will directly affect the cost you will incur for embedding analytics. A complete portfolio solution that integrates real-time monitoring, reporting, analysis, dashboards, and a robust and scalable infrastructure will enable staff to be more efficient and effective. With fewer components to buy, manage and support, an integrated solution makes it easier, faster and less costly to scale up to more users and out to more data and functionality.

ONGOING MAINTENANCE

The majority of human capital costs go toward maintaining ongoing operations after year one. Ongoing staffing costs include creating new reports; ensuring the platform is available for use; overseeing users, software, security and performance; and actually maintaining the BA system. The BA platform's efficiency levels directly impact the number of required staffing resources. Platforms that offer self-service alternatives will allow users to perform the majority of design and analysis, thereby reducing the load on the IT team and making your product more usable with your customers.

CONCLUSION

BA software for embedded analytics is an example of where the 80/20 rule applies.

You should anticipate the licensing, hardware and startup costs to be about 20% of your TCO, with ongoing maintenance, staffing and integrations accounting for the remaining 80%. Selecting a BA platform with a simple and inclusive licensing model, user-friendly interface for a shorter learning curve, fewer IT requirements, and scalable commodity hardware will be your best bet to lower the total cost of ownership for any embedded analytics project.

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