

Estimating the Costs of an ERP/Business Application Initiative

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Using a cost-estimation process will help to ensure that an application initiative's costs are accurately calculated. CIOs and application leaders should use the process outlined in this research to estimate the costs of a given business application initiative.

Key Findings

- Following a cost-estimation process that focuses on individual cost components and project-specific complexities achieves a more precise and useful cost estimate, which will allow meaningful comparisons of application spending across the application portfolio.
- A systematic approach to cost estimation that effectively reflects the cost-related elements of a given initiative, and documents any assumptions made when determining them, and increases approval rates and the likelihood of realizing measurable business benefits with a project.
- The cost-estimation process is an integral part of creating a robust business case, and provides key inputs into the business case.

Recommendations

- When determining costs for an application initiative, follow a process that estimates the three main areas of cost: establishment, recurrent and avoided.
- Populate the relevant business case model with these costs, or create a model that documents the costs for the initiative under consideration.
- Use the process to review the costs and how they were determined, should they prove to be inaccurate or should they require amendments in the current times of high uncertainty and volatility.

WHAT YOU NEED TO KNOW

Follow a formal process for estimating application initiatives' costs to increase the consistency of cost estimations within the organization, improve the accuracy of cost estimations and assumptions, and reduce the time and effort invested in such exercises. A well-designed, systematic approach that effectively reflects the cost-related elements of a given initiative and documents any assumptions made when determining them will increase approval rates and the likelihood of realizing measurable business benefits with a project.

To accurately estimate costs, follow a process that reduces the time and effort expended overall on the exercise, improves the accuracy of cost estimations and allows comparisons among costed initiatives. First, identify the tasks required to successfully execute the initiative. Then, consider all establishment costs (for example, those costs associated with establishing and deploying the application) for the initiative, including the timing of the costs for the initial and follow-on stages of the initiative. Next, consider any recurrent cost implications (for example, periodic costs associated with operating and maintaining the application) for the initiative. Then, consider any avoided costs the initiative may encounter. Cycle through these steps until all the tasks for the initiative have been costed. Finally, document the costs in either the business case model for the initiative or in a model created for the cost-estimation process. Gathering the costs in this manner also allows organizations to conduct uncertainty and sensitivity analyses to further refine the costing outcomes. Organizations that follow this process, or a variant of it, will be more likely to find that their cost estimations meet executive approval, and that their cost estimates are more accurate than those that do not.

ANALYSIS

1.0 Context

Determining the costs of an application initiative is often viewed as a difficult task because of the challenges most organizations face in estimating the costs accurately. This is understandable, because of the intricacies involved in estimating costs. Yet, accurately estimating costs is increasingly important in the current economic environment, where most IT budgets are under pressure. However, an accurate cost estimation brings many benefits to the organization. It provides the decision makers with the information needed to make a sound choice, enables effective chargeback models to be developed, forms a critical component of the business case for the initiative and creates a baseline for measuring the project's success at a future date. Uncertainty and sensitivity analyses can also be included to formalize where there are risks associated with the costs, and help the organization deploy appropriate strategies to mitigate these risks to some degree.

The various costs associated with the cost-estimation process include originating costs for the initiative and ongoing costs for the initiative. When estimating these costs, they should be calculated for the agreed-on life of the application (that is, three, four, five, seven or 10 years), taking into account depreciation and amortization rules. In determining these cost estimates, it is critical to include any assumptions made when preparing the estimates for the initiative.

Applications represent a significant investment of capital and time for most organizations. Investing in these important initiatives requires a governed application strategy process that is periodically reviewed. The periodic review of the application portfolio, coupled with an understanding of how the application strategy supports the organizational goals, lays the foundations

for better application budgeting. The review and prioritization process is especially important in light of the present global financial crisis and resultant budgetary tightening.

A critical component of determining where to spend increasingly limited budgetary funds is determining the cost of application initiatives. However, many organizations struggle to estimate these costs in a consistent way. By following the process outlined in this research, application initiative costs can be estimated and documented for inclusion in a business case, or for comparison against other initiatives under consideration.

In the cost-estimation process, there are three main cost categories to consider:

- Establishment costs
- Recurrent costs
- Avoided costs

2.0 Establishment Costs

Establishment costs are the costs associated with establishing and deploying the initiative, or the costs associated with decommissioning from production any applications or platforms that are no longer required as a result of the initiative.

3.0 Recurrent Costs

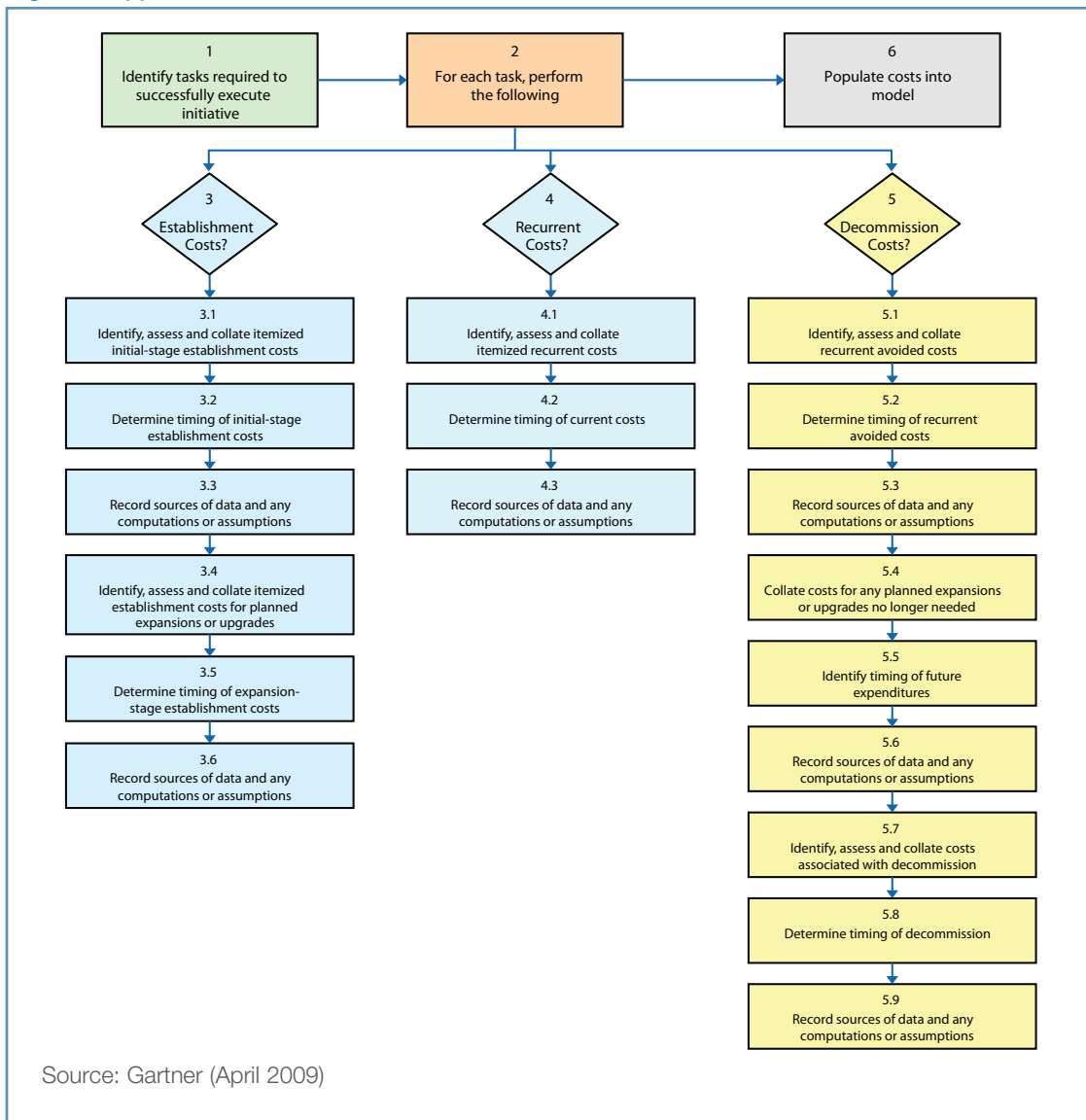
Recurrent costs are the periodic costs associated with operating and maintaining any new, enhanced or extended applications or platforms that the initiative requires. Organizations considering software-as-a-service (SaaS) deployment options should capture these costs as recurrent costs.

4.0 Avoided Costs

Avoided costs may come from two sources. They may be recurrent costs for an established application or platform that will no longer be used because of decommissioning as a result of the initiative; or they may be avoided, nonrecurrent costs for any application or platform that is decommissioned as a result of the initiative.

In estimating the costs for an initiative, there are six main tasks (as shown in Figure 1) an organization needs to undertake. This research describes each task and the steps an organization must take to determine the costs associated with a given initiative. If the cost-estimation process is part of an overall business case process, then these costs inform the business case process.

Figure 1. Application Initiative Cost-Estimation Process



The first step in the cost-estimation process is to identify the tasks required to successfully execute the initiative. This involves confirming the scope of the initiative (for example, applications, platforms and infrastructure to be acquired; interfaces and data migration requirements; and applications and platforms to be decommissioned). These aspects of the scope have costs associated with them, and the remainder of the steps in the cost-estimation process involves determining these costs.

The second step in the process involves cycling through steps three through six. During these steps, it's important to consider schedule requirements and constraints, and the resources required to properly execute the task being costed. Consideration should be given to the capabilities and skills required, the number of full-time equivalents (FTEs) required (including in-house, backfill and contractor FTEs), any tools or equipment needed, additional facilities that may be required, training and associated training materials, and consulting services and other external services needed.

The third step of the process gathers the establishment costs for the initiative. Establishment costs are the costs associated with establishing and deploying the initiative, as well as the costs associated with decommissioning any application or platform that is no longer required as a result of the initiative. This step should include any costs associated with green IT initiatives, either in establishment costs or in decommissioning costs.

When estimating establishment costs, consider the following cost estimates. This is not an exhaustive list; not all cost elements may apply to all initiatives, and not all cost elements may need estimation if the cost-estimation process is being performed at a high level. Cost elements for establishment costs break down into three areas: project resources, system and platform acquisition and construction, and system and platform implementation and transition:

Project resource costs include, but are not limited to:

- Personnel
 - In-house personnel
 - IT
 - Business
 - Contractor
 - IT
 - Business
 - Backfill (for example, those costs associated with filling roles left temporarily vacant by resources assigned to the project)
- Tools and equipment required by the project
- Facilities for the project personnel
- External services
 - Consulting
 - Other
- Training

System and platform acquisition and construction costs include, but are not limited to:

- Software
 - Application license costs
 - Database license costs
 - Operating system license costs
 - Monitoring and management tool costs
 - Costs for other software
- Hardware
 - Application platform hardware acquisition costs
 - Database platform hardware acquisition costs

- Monitoring and management tool platform hardware acquisition costs
- Peripheral hardware acquisition costs
- Facilities required to house, secure and control the platform environment
- Personnel involved in the system and platform acquisition and construction
- External services
- Training required for any new or changed tools or equipment
- Network and communications required for the application or platform being acquired

When compiling these costs, consider requirements for all environments (that is, production, test, development and business continuity) involved in the initiative. In some cases, nonproduction or initial work may be performed in cloud instances, while final production will be delivered on-premises. Costing for cloud instances should be included when this is the case. When considering personnel costs, check to ensure that double counting does not occur. Some or all of these costs may have already been collated in the cost estimate for project resources.

System and platform implementation and transition costs include, but are not limited to:

- Software
 - Costs for any software required to enable the implementation or transition of the applications and platforms to the initiative under consideration (that is, data cleansing and migration tools)
 - Costs for any database licenses required to enable the implementation or transition
 - Costs for any temporary platform operating system licenses required to enable the implementation or transition
 - Costs for any temporary system monitoring, management or other tools required to enable the implementation or transition
- Hardware costs for any temporary hardware required to enable the implementation or transition
- Personnel involved in the acquisition, construction, installation or operation of any temporary software, hardware or facilities that are required to enable the implementation or transition

- External services required to support the acquisition, construction, installation or operation of any temporary software, hardware or facilities that are required to enable the implementation or transition
- Network services required to support the acquisition, construction, installation or operation of any temporary software, hardware or facilities that are required to enable the implementation or transition

In most instances, it is unlikely that there will be any significant facilities or occupancy costs specifically associated with the temporary hardware platforms needed to enable the implementation or transition. As before, some or all the personnel costs associated with implementation and transition may have already been collated in the cost estimate for project resources.

The fourth step of the process gathers the recurrent costs for the initiative. Recurrent costs are the periodic costs associated with operating and maintaining the initiative. In estimating recurrent costs, organizations should consider the following cost estimates. This is not an exhaustive list, not all cost elements may apply to all initiatives, and not all cost elements may need estimation if the cost-estimation process is being performed at a high level.

- Software
 - Application licenses and maintenance
 - Database licenses and maintenance
 - Operating system licenses and maintenance
 - System monitoring and management tool licenses and maintenance
 - Other licenses and maintenance
- Hardware
 - Lease, rental or other costs for application platform hardware
 - Maintenance or repair costs for application platform hardware
 - Lease, rental or other costs for database platform hardware
 - Maintenance or repair costs for database platform hardware
 - Lease, rental or other costs for system monitoring and management tool platform hardware
 - Maintenance or repair costs for system monitoring and management tool platform hardware

- Lease, rental or other costs for peripheral hardware
- Maintenance or repair costs for peripheral hardware
- Facilities
 - Utility and other running costs required to house, secure and control the hardware environment
 - Rental, lease or other costs for facilities or associated equipment
 - Annual costs for all FTEs required to plan, manage, operate and maintain the applications and hardware under consideration
 - Charges for external services related to the day-to-day planning, management and operation of the applications and hardware under consideration
- Training
 - Costs for delivering training to new staff or periodic refresher training to staff
 - Costs to maintain training materials
- Retail, lease, transmission or other costs for any data network systems that form part of the platform for the application, including any interenterprise communications costs required

All costs for the purpose of estimation should be calculated annually. Personnel costs should include all costs associated with the total cost of employing the FTE. Personnel categories may include, but are not limited to, IT technical and operations staff, business and IT finance and administration staff, business and IT management staff, business and IT training staff, and production staff. If an organization schedules regular upgrades or wants a more holistic view of the lifetime costs of the application, then annualized costs for a planned upgrade may be included as a recurrent cost.

The fifth step of the process gathers the avoided costs for the initiative. Avoided costs are costs that will no longer be incurred as a result of the initiative, or costs that may be avoided as a result of the initiative. For the purpose of the costing estimate, these should be IT costs only. If avoided business costs exist, then they form part of a business case for the initiative as quantified business benefits.

The sixth and final step of the process gathers the identified costs and savings, and populates the costs into a model. The data gathered in this process populates much of the costs portion of a business case model. If the cost estimate is not being conducted as part of a business case, then a cost-estimation model should be created in lieu of the business case model, and should contain all costs gathered during this process and any assumptions made during the derivation of these costs.

In creating the model, take the following into consideration:

- Model the costs across the effective life span of the application, including a net cash flow. Present the net present value of cash outflows in table and chart formats.
- When constructing the model, remember that it should be flexible enough to be readily updated and expanded with greater detail through the life of the project and the application. For example, if using Microsoft Excel, then make use of named cell ranges, especially for frequently used working variables.
- Document all assumptions clearly within the model. If costs prove to be inaccurate, then it is likely to be because of the assumptions made.

5.0 Key Facts

- A cost-estimation process adds rigor and structure to help overcome the challenges of determining the costs an application initiative will incur during its life cycle.
- An accurate cost estimation brings many benefits to the organization by providing the decision makers with the information needed to make a sound choice, enabling the development of effective chargeback models and creating part of the baseline for measuring the project's success at a future date.
- Creating a simple, flexible cost-estimation model will help document the initiative's costs and assumptions made in their derivation, and allows for expansion and updates to the costs as needed.