

# Understanding the Total Cost of Ownership (TCO) analysis for IS in the healthcare setting



by Colin Konschak, MBA, FHIMSS, FACHE and Philip Felt, PMP, MBA

*In an industry with slimming margins and increasing demands for quantifiable results in every business and clinical area, it is increasingly important for healthcare organizations—and the internal “owners” of budget line items—to identify in a compelling way:*

- *the total cost of ownership of specific investments and*
- *the benefits expected over the life of the application.*

*Healthcare IS investments deserve such detailed analysis. Healthcare organizations are currently embarking upon multi-year technology investments, often exceeding the \$100 million mark. However, the “out of the box” cost of IS investments does not reflect the true cost of any system.*

---

For any IS purchase, determining all associated costs—the total cost of ownership (TCO)—can be critical on many fronts. First and possibly most obvious, IS investments deserve a stringent and encompassing due diligence review, especially because they easily account for a significant percentage of an organization’s bottom line. In addition, TCO can help internal champions of an application to gain both internal and external stakeholder support for budgeting, for purchase, for upgrades and for replacement.

The good news: proven TCO methodologies can capture hard and soft, confirmed and expected costs. With solid TCO information, healthcare professionals can evaluate IS investments to ensure the measurement, realization and optimization of benefits.

This paper provides an overview of the TCO model, including the components of a TCO analysis, the process and key considerations for use of a TCO report.

## **The goal: measure, then manage**

The purpose of the TCO model is to provide an organization’s executive leadership with financial projections with which it can make informed IS business decisions related to a specific project, such as purchase or upgrade of an electronic health record (EHR) system, health informatics systems, or clinical information portals, for example.

Rather than being a stand-alone or one-stop tool for analysis, the TCO model is one of many management tools to be used in concert to evaluate a specific project. A Benefits Assessment, discussed here briefly as well, is another such tool.<sup>1</sup>

A TCO is based upon the premise that an organization cannot *manage* IS if it does not *measure* IS.

---

<sup>1</sup> For those familiar with the Gartner group’s studies, the TCO model discussed here is an estimated project “cost assessment” and does not align with the Gartner group’s definition of “Total Cost of Ownership.”

## The TCO process: an overview

TCO has become an industry standard for measuring and managing project-related costs over time. It looks beyond a one-year budget cycle. Based on the experiences of Tidewater Consulting, the report is a fluid, or living document that changes as an organization finalizes purchasing contracts, determines feasibility of various components of the project, and adapts to new opportunities (in products or technologies that become available, for example). The “final” TCO therefore evolves as planning and discussions progress.

A thorough TCO analysis engages all stakeholders, not only to gain their support and perspectives concerning the IS product, but also to ensure that the final TCO report accurately reflects all costs, benefits, goals and expectations. For example, the finance team is a key player in determining where costs reside. (See sidebar, “Capital or Operating.”) Clinicians not only contribute to determining functionalities required for an IS system, but their level of experience with IS systems will also drive the level of training required for a hospital to optimize expected benefits of any specific system. Human Resources staff, in turn, can inform these “soft” expenses.

## Components of a TCO report

The TCO attempts to estimate all costs related to the ownership, management, support and usage of the components comprising the IS project. Indirect costs are a key component of the TCO because, as mentioned, many costs cross organizational boundaries and reside outside of the budget of the project sponsor.

Direct and indirect costs might include:

- initial hardware
- initial software
- implementation, including system downtime
- management
- research of vendors & contracts
- service
- support & training
- administration
- upgrades & related re-training
- capital purchases
- direct and indirect labor
- subscriptions
- system integration
- maintenance

Of special note, Tidewater Consulting finds that licensed software, licensed software support and professional services are the three top drivers of costs in IS TCO expense analyses.

In reviewing the cross-organizational scope of this analysis, it becomes clear that the TCO is driven by processes, people, technology and tools and comprises all costs expected in a defined

### Capital or Operating?

Generally, determining whether an expense falls under the heading of “capital” or “operating” is based on generally accepted accounting principles. Below is a quick snapshot of the differences. Financial professionals will be the arbiter of these issues for the TCO analysis.

**Capital Expenses** include those related to items over a certain dollar threshold and with a useful life of over three years. This minimum cost is often \$500, but some organizations put the threshold higher. Capital expenses are considered assets and can be depreciated.

A new computer system and most of its components can be considered capital, for example. In addition, internal staff assigned full time to the computer system implementation may have their salary expense capitalized, at the hospital’s discretion.

**Operating expenses** often include items for which an organization pays but which it does not “own.” Expenses related to product selection and software support, for example, usually fall into this category. Generally, organizations prefer to keep operating costs as low as possible since they negatively impact the bottom line.

timeframe. The timeframe might cover three, five, seven or even 10 years for some projects. It bears repeating that many related costs will be found outside of the IS department.

---

## **Five steps for creating a Total Cost of Ownership analysis for an IS project:**

**Step 1: Project Initiation.** This is a very important phase in the project, because during this phase we determine:

- the scope of the project
- client expectations
- basic facts and a foundational context concerning the client environment

Ultimately, the project objective is defined at this stage.

**Step 2: Cost Modeling.** This major step in the TCO analysis will be used throughout the TCO project and will continue to be refined as new information is obtained. In this stage, we work to define costs to be included in the model and to classify the costs according to the client's financial policies and procedures.

As discussed previously, licensed software, licensed software support and professional services are three of the top cost drivers in this project. Therefore, it is imperative to define at this point the scope of applications included in the project.

**Step 3: Cost Collection.** In this phase, all currently available cost estimates are collected and entered into the financial model.

**Step 4: Evaluation / Final Report.** This phase in the TCO project is a client deliverable: the final evaluation and interrelation of all results, the deduction of recommendations, as well as the communication of findings to all stakeholders.

The TCO presented in this deliverable should be considered a snapshot in time, and it may or may not change substantially from this point forward. It is important that all stakeholders understand this fact.

**Step 5: Ongoing Refinement of the TCO Model.** Of course, not all contract negotiations required for a large project can be finalized at one time, nor is a rollout or implementation plan usually determined concurrent with or even immediately after delivery of the Final Report. Therefore, the TCO model acts as an estimate of project costs based on data and decisions available as of the date of the report deliverable. As contract negotiations progress and key decisions regarding rollout and implementation strategy are reached, the TCO model should be refined to include the most current project cost estimates.

The organization should maintain an up-to-date TCO at all times so that the impact of any deviations from initial projections can be captured and evaluated for cause.

### **Ownership of the TCO project: a transition**

Tidewater Consulting recommends that any TCO consultant continue to own the TCO throughout the refinement process. At some point, the consultant will hand off the TCO to someone within the organization.

Knowledge transfer will occur as ownership transitions to the internal owner or team.

## **A Benefits Assessment: maximizing the TCO report**

In order to capture enhancements in productivity and business returns related to any IS project, organizations should also consider conducting a Benefits Assessment as a companion to the TCO process. This type of assessment reveals otherwise hidden benefits that fall into one of two categories: quantitative financial benefits and softer value benefits.

Quantifying all benefits through such a tool can lead to a substantial decrease in the total cost of ownership, because the assessment can reveal benefits that reside in areas such as cost reduction, quality improvement, risk mitigation, worker productivity, etc. A team of Six Sigma practitioners are often valuable assets in accomplishing the benefits assessment.

## **Conclusions**

The Total Cost of Ownership analysis helps to make IT costs transparent across the organization, create hard data for pricing and accounting purposes, and reveal opportunities for increased savings and efficiencies. The TCO report identifies a starting point for areas of improvements, and a measuring stick for analysis of strategies for priority areas.

Personnel who have a background in healthcare operations, are familiar with internal and external stakeholders, are experienced in financial areas and have hands-on TCO experience can help a single hospital or an entire system to maximize efficiencies, improve the bottom line and provide better and more efficient healthcare for the patients they serve.

## **About Divurgent**

Founded by a team of IBM consulting veterans, Divurgent is a national health care consulting firm focused solely on the business of hospitals and other healthcare providers. We provide advisory, interim management, revenue cycle management, project management, and modeling and simulation services to help improve patients' lives.

We are committed to:

- Providing Thought Leadership
- Providing Exceptional Value for our Services
- Facilitating Knowledge Transfer
- Improving Client Satisfaction



**Central / West Office**  
5919 Greenville Ave  
Suite 144  
Dallas, TX 75216-1906

**East Coast Office**  
1340 Great Neck Road  
Suite 1272  
Virginia Beach, VA 23454

(877) 254-9794

[info@divurgent.com](mailto:info@divurgent.com)

[www.divurgent.com](http://www.divurgent.com)