

# MANAGING YOUR COST KNOWLEDGE

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A company's most valuable asset is its intellectual capital - the knowledge that employees store in their office and their minds. Your organization's ability to harvest, store and reuse this knowledge has a direct impact on how successful it is at utilizing its core competencies.

According to KPMG, good knowledge management practices lead to better decisions, faster responses to key business issues and enhanced customer service. Strong management of your cost knowledge will lead you and your business to better, faster decisions.

## What is Knowledge Management?

Knowledge Management is the process through which an organization effectively captures and reuses all of its knowledge. Everyone in your organization has knowledge. They have knowledge about the goals and visions of the organization, the plans and objectives in place to reach those goals and they know how their roles and responsibilities fit into these plans and objectives. They have knowledge of top-level organizational policies, processes and procedures that are in place to enable the organization to achieve its goals successfully.

In addition to the knowledge outlined above, individuals have also retained knowledge about the specific activities and processes that they employ to meet their goals and objectives. This knowledge is maintained in their offices and their minds and is often unknown to the rest of the organization. If an employee leaves the company, much of this knowledge goes with them.

## Managing knowledge is not easy:

Managing your cost knowledge well means providing cost analysts a framework for capturing and reusing all kinds of knowledge. To manage knowledge effectively, one must be able to capture human experiences and insights and store them in a way that is reusable by others.

According to the Meta Group, by the end of 2001 the average company will need to manage 2500 gigabytes of information. Given the amount of this information, organizations need to understand what data they need to store and how to structure and organize it.

Like everyone else in an organization, cost analysts need to manage their cost knowledge. The capturing and storing of this knowledge in a reusable format is far from trivial. In addition to processes and methodologies that must be documented and cataloged, there are also a tremendous amounts of raw data that must be collected, analyzed, converted into reusable data and then stored in such a way that is easy to find

and use. Three critical components of knowledge that must be maintained for successful planning, estimating and budgeting include:

- Internal performance benchmarking - calibration against actual data
- External performance benchmarking - supplier assessment or competitive analysis
- Expert opinion

## Implementing a good cost knowledge management system:

Most cost analysts agree that there are benefits of implementing a cost knowledge management system. Who could argue with having easy access to knowledge of your own and others' past experiences. Cost analysts typically struggle with creating a formal system for managing their cost knowledge because of the enormity of the implementation task. One must decide what data to capture, how to structure it for easy reuse, what implementation tools are need for the system, how to train personnel and how to get the support of the practitioners.

While admittedly difficult, successful cost knowledge management is far from impossible. By starting small and approaching the task in a logical and organized fashion, you optimize the likelihood of successful implementation. Begin by understanding your goals for cost knowledge management. Start small but smart with achievable short-term goals, but make sure you understand what your long-term goals are so that you develop the proper infrastructure for long-term success.

An equally important success factor in knowledge management is having the right people involved. It is important that the cost analyst tasked with formalizing the process for cost knowledge management has support from management and practitioners necessary to implement. It is also important to assemble a team of specialist who understand both the technical and financial aspects of running the business. You don't only need access to cost and accounting information, you also need to have people available who understand all of the technical and performance parameters that drive the costs of your products and services.

## From Data to Information to Knowledge:

The ultimate goal of cost knowledge management is to collect data that represents internal and external performance benchmarks as well as data that summarizes expert knowledge. Performance benchmarks require the collection of actual cost data along with technical and performance cost drivers for both internal and external projects. The encapsulation of expert opinion includes capturing all quantitative and qualita-

tive assumptions that were part of the benchmarking process for each project.

Knowing the right data to collect is an important first step in the knowledge management process. Benchmark and expert knowledge data should be organized to the lowest possible level of detail with respect to the project components they represent - turning the data collected into useful information. To convert this information into knowledge it is necessary to store it, along with all of the other information collected, in an easily reusable fashion. Storing data in a sensible hierarchy and applying logical attributes to each component can accomplish this task.

From an implementation perspective, categorization of cost data requires two noteworthy steps. First, determine the right hierarchy in which to store the data and an appropriate set of attributes that align with your organization's planning, budgeting, and estimating procedures. Then, develop and document processes so that everyone in the organization follows the same rules for storing and reusing knowledge.

A hierarchical structure is important because it allows for the establishment of product or project related groupings of your data. A strong way to enforce hierarchy into the knowledge management system is to develop standard work breakdown structures or product breakdown structures for your products and services. Each time a piece of cost information goes into the knowledge management system, one should identify where it fits into these standard structures. Thus, everyone in the organization who needs to perform an estimate for the wing of an aircraft has easy access through this structure to all of the wings in the knowledge management system.

#### Hierarchical distinctions are sometimes not enough:

There are times when planning involves more granular detail. When this is the case, attributes or qualitative keywords are required to make easy reuse of the data possible. Determining the right keywords and attributes for the kinds of products and services your organization delivers requires a thorough understanding of those products and services, the processes required to deliver them and the things that make these processes more or less expensive. The questions you need to ask include:

- What technical characteristics have the most impact on cost? (i.e. size, weight, volume, number of parts)
- What performance characteristics have the most impact on cost? (i.e. speed, thrust, horsepower)
- What qualitative characteristics have the most impact on cost? (i.e. materials, manufacturing processes, development processes, technological factors)

It is important in the early stages of knowledge management to create a comprehensive organizational attribute dictionary as well as to institute a process that will control new attributes

and keywords that need to be added. If there is no attribution control, a massive dictionary will emerge, which will impede the easy reuse of knowledge.

#### The right tool for cost knowledge management

Establishing good processes for data collection, storage and retrieval is a key component of successful cost knowledge management. Selection of the right tool for knowledge management is key as well because without a tool that supports the processes you have defined, your knowledge management efforts will probably fail.

The right tool will facilitate the process of converting data to information to knowledge. It needs to support the qualitative keywords, quantitative attributes and structural hierarchy. The tool should support collaboration using web-enabled technologies. The retrieval facility should contain analysis features to make it possible to study trends in cost and other quantitative cost drivers.

The PRICE KnowledgeManager is a companion application to the PRICE Estimating Suite. It allows analysts to retain internal and external benchmarks by moving data directly from the PRICE models into the PRICE KnowledgeManager repository. The analyst can add qualitative and hierarchical attributes through the PRICE KnowledgeManager store facility as well as store quantitative attributes directly from the ID Sheet in the PRICE product. Retrieval of data is accomplished through keyword searches. Benchmark data can be analyzed using a powerful trend analysis feature or can be exported directly into a PRICE Estimating Suite model. The PRICE KnowledgeManager offers powerful collaboration possibilities by combining a database with a powerful user interface and direct links to PRICE Systems' products.

#### Conclusion:

The PRICE KnowledgeManager gives you the right tool to fashion your organizational information into knowledge that will help the entire organization make faster, better decisions. Good cost knowledge management requires the right tool with a strong understanding of the products, services, process and cost drivers within the organization that is organized in a successful and reusable fashion. Even though the cost estimating community has understood the value of tools and practices that simplify the process of transforming data into knowledge for years, as technology and globalization continue to shrink the barriers in our businesses, knowledge management becomes increasingly important across all levels of the organization.