

**Knowledge Management in the Support Center:
Improving Efficiencies, Increasing Satisfaction,
and Decreasing Costs**

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Abstract

Knowledge Management is a methodology for capturing, optimizing, delivering and maintaining a collection of information that provides guidance or action, and is of value to the organization. When a support professional has access to knowledge, they can quickly assist customers with problems and inquiries. As a result Knowledge Management has become an essential practice within today's support centers. Customer service and support software allow companies to manage the interactions with customers and employees. When combined with Knowledge Management, the support center is able to improve efficiencies, increase satisfaction, and reduce the cost of service.

Knowledge Management is more about process and people than technology. Modifying the processes within an organization can impact the culture and the people. Support center managers need to understand the impact Knowledge Management can have on support professionals and customers. It is important to share these benefits with the support staff to gain their support. When support professionals understand how Knowledge Management can benefit them and their customers, their resistance to the process changes is minimized.

Support center managers must justify the implementation of Knowledge Management to their senior management. Senior managers will understand the need to improve efficiencies, but are most concerned with customer satisfaction and reducing the cost of service. Converting the benefits into dollars can be challenging but often essential to gain senior level support.

Once a vision created, the support center has the task to select the Knowledge Management technology that will allow them to deliver on their expectations. There are a number of requirements that the support center manager should consider when evaluating Knowledge Management tools. One key requirement is how the tool will work the customer service and support software utilized by the support center.

The question is not if a support center should implement Knowledge Management. It is when and how to implement it so as to gain the most advantage for the company.

Introduction

When a customer, or an employee, has a problem or a question they turn to the support center for the answer. The responsibility for providing the answer falls to the support professional whose job is to satisfy the customer. The support professional must be able to communicate politely with the customer while trying to identify the real problem and determine the appropriate course of action or answer. And then the support professional must communicate the answer to the customer in terms not defined by an engineer or a lawyer.

Satisfying the customer depends heavily on the abilities of the support professional and the resources available to them. Over the past few years Knowledge Management has become the critical resource that is enabling support professionals to answer questions quickly and correctly. Capturing answers to known questions, and then leveraging those answers when a customer contacts the support center is improving the efficiency of the support center, increasing the satisfaction of the customer and the support professional, and decreasing the costs of the service.

This paper will take a closer look at the effects that Knowledge Management can have on the support center. Once we understand why support centers are turning to Knowledge Management, we will also review some of the key features that support centers must consider when selecting Knowledge Management tools.

The Issues of the Support Center

Whether the support center is providing support for the company's product and services to customers, or providing support for the company's infrastructure to employees, the support center managers are continually challenged to improve their service offerings while faced with an ever-changing environment. The support center manager is constantly looking for ways to improve processes, train his/her staff, and provide better tools that will help address the issues of the support center. Let us review some of the issues that exist and can be impacted by Knowledge Management.

"Most companies today cannot afford to invest in more technology, more people, more infrastructure," said Carl Frappaolo, an analyst with Delphi Group Ltd., in Boston. "They need to better leverage existing resources. That is where knowledge management comes in."

Source: Knowledge Management: Value Is Relative By [Lisa Vaas](#) April 1, 2002

- **Customers are getting different answers to the same question.** While there may be multiple right answers to a given question, this is not usually the case. Providing the wrong answer or even the unnecessary complicated answer to a question has the biggest negative impact on customer satisfaction.
- **Customer demand is growing.** Growth within a company generally means more customers and more employees.
- **The same problem is researched and solved more than once.** The support professional is unable to share the knowledge of his/her peers. Therefore, when they receive a question that was previously answered by someone else in the organization, they must investigate it and research it as if were a new problem. This requires valuable time and can lead to different answers or inconsistent service.
- **The number of products and services support is growing and becoming more complex.** As new products and services are introduced by the company, the support center is be asked to take on the responsibility for supporting these newer and more complex products.
- **Knowledgeable support professional get promoted, or worst yet, leave the company.** As support professional leave the organization, the knowledge they have gained leaves with them. Staff members tend to specialize in various products and services. Their departure from the organization creates a vacancy that negatively impacts the service of the support center.
- **Newly hired support professional remain ineffective for weeks or even months.** Most support professionals are hired for the customer service skills and not for their product knowledge. It can take weeks for them to learn the products supported by the

support center. The expense of training new staff members can be costly and impacts other staff members as they support their new team member.

- **Training budgets are less than efficient and the time off for training does not exist.** If the support center had the necessary funds for training all the staff members on all of the products supported, they probably do not have the time to provide the training. Classroom training, computer-based training, reference books and even lab time requires the support professional to be assigned time off from the phones. Dedicating sufficient time off the phones for all staff members is rarely an option for the support center manager.
- **Burnout and low job satisfaction of the support professional lead to poor service.** When support professionals are solving the same problems and providing customers with the same answers repeatedly, they become frustrated with their job. In addition, if they don't have the ability to answer questions, then they feel helpless. Either situation can lead to burnout and the support professional's ability to provide quality customer service.
- **Level 1 support professionals are escalating too many calls to Level 2.** If a Level 1 support professional cannot resolve a problem in a reasonable amount of time, the problem is escalated to a more knowledgeable and expensive support professional. The customer is waiting longer and the cost of support increases.

Support center managers that successfully implement Knowledge Management are addressing these issues and others. By implementing a Knowledge Management culture along with the technology to enable the processes, support centers are improving efficiencies, increasing satisfaction, and decreasing costs.

Improving Efficiencies

Providing answers to customers question has evolved into a defined process so that all cases can be tracked, analyzed, and closed properly. In many support centers, the process looks something like the following:

1. **Identify the Customer and Open a Case.** When a customer calls the support center to report a problem or ask a question, the first task of the support professional is to identify the customer and then to create a new case in the call management system used by the support center. If the customer is known by the call management system, then identifying the caller may be as simple as entering an identification number, username, account number, phone number, or even the person's name. If the customer is not known, then the support professional captures information about the caller in the call management system. A new case is opened and a unique identifier such as a case number or ticket number is created.
2. **Identify the Problem.** The customer may provide the support professional with the actual problem. But in many cases, the customer provides the support professional with symptom. It is up to the support professional to ask questions to gather more information in an attempt to identify the actual problem. This step may require extensive research by the support professional. The details about the problem are documented in the case. As

the clock ticks, the customer waits.

3. **Identify the Answer.** If the support professional knows the answer to the problem, they simply inform the customer. All too often the support professional must research the answer, turn to a peer for help, or even escalate the case to a more experienced support professional. The details about the answer are documented in the case. The customer continues to wait and the cost of providing the answer increases.
4. **Close the Case.** The support professional then contacts the customer to provide them the answer. This may be done with a single phone call or an email. Once the customer is satisfied with the resolution, the support professional finalizes the case documentation and closes the case.

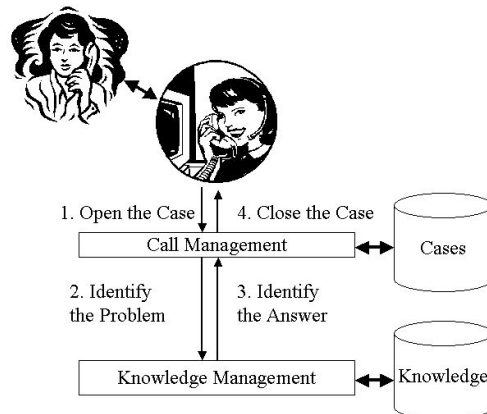
"The fundamental reasons for adopting KM have not disappeared. Retention of expertise of key personnel and improved interaction between technology, people and processes continue to drive investments in a variety of software and services to support KM initiatives."

Source: Sheila McGovern-Proud, Research Manager with IDC's European Services Research Group.

While this process may seem simplistic, it is the basis for all support cases managed by support centers. Support center managers track the time required for each case and know if they can reduce this time then the support professionals can handle more cases and satisfy more customers. To minimize the time spent identifying the caller and to ensure consistent information is capture about each customer, support centers implement call management software. To minimize the time spent identifying the problem and the answer, investments are made in the training of the support staff. Support center managers know a more knowledgeable staff will be able to minimize the time to identify the problem and the answer.

We previously discussed that there is never enough time and money to train every support professional on every new product the support center is tasked to support. This is one reason why support center managers are turning to Knowledge Management. They are looking for a means to reduce the time required to identify the problem and the answer. Let's examine how Knowledge Management is improving the efficiencies of the support center.

- **Searching known problems minimize research time.** The knowledge base is a collection of known problems and questions along with the appropriate solutions and answers. Once the support professional captures a description of the problem from the customer, they can then search the knowledge base to determine if the problem is already known to the organization. When the problem is located in the knowledge base, the appropriate solution or answer is made immediately available.



- **Diagnostics minimize research time.** These may be referred to as troubleshooters, even checklists. By following tested processes for identifying the problem, support professionals can reduce the time required to identify a more complex problem. Less experienced support professionals are leveraging the diagnostic skills of the more experienced staff members. Making these processes available through a knowledge base, the support professional quickly locates the diagnostic to assist them in researching the problem.
- **Problems are researched and solved once.** When the support center encounters a new problem, the first support professional to solve the problem documents the problem and the solution. The next time the support center receives a call on the problem, the support professional can leverage the knowledge created by his or her peer. Costly research is minimized to the first time a problem is encountered.
- **Callbacks are reduced.** When a problem is resolved on the first call by using the knowledge base, the time related to callbacks is virtually eliminated.
- **New support professionals are productive.** New support professionals can answer questions from customers by utilizing the knowledge base, thus minimizing the training time and support required by their peers.
- **Case documentation is automated.** When a problem is resolved using a knowledge base, the case documentation can be automated. Information about the problem and the solution can be extracted from the knowledge base and a reference to the document that was used to resolve the case can be appended to the case. The time required to close a case can be minimized and the quality of documentation improved.

By implementing Knowledge Management in the support center, valuable time can be saved related to identifying the problem, identifying the answer, and closing the case.

Increasing Satisfaction

Satisfaction relates to the quality or state of being satisfied. When Knowledge Management is successfully implemented in the support center, both customer satisfaction and the job satisfaction of the support professional are positively impacted. Improving the quality of service for the customer and the quality of life for the support professional are challenging benefits to quantify. Both are objectives of support center managers some of which measure either or both via surveys. Let's first examine how Knowledge Management can positively impact on satisfaction.

- **Support professionals can response to broader range of questions without the need for expensive on-going training.** When a person is frequently unable to assist a person in need, or perform their job adequately, he/she becomes frustrated and has a sense of helplessness. Support professionals who can leverage a knowledge base to provide a customer with quality answers, increases their ability to satisfy customers.
- **More calls are resolved on the first contact by Level-1 support professionals.** Higher first call resolution rates means customers are getting answers faster without the need of costly escalations and timely callbacks. Fewer escalations also mean that Level-2

support professionals are able to focus on the challenging calls without being interrupted with the repeat problems that were not properly being addressed by the Level-1 staff.

- **Reduced average call time.** As more calls are answered by Level-1, the total time required to answer a customer question is reduced. Customers expect faster support and appreciate when the support center can get them productive quickly.
- **New support professionals can quickly become productive in a support center,** minimizing the initial training requirements and costs. The new staff members gain confidence in their abilities and their decision to join the support center when they are able to add value.
- **Customers get the same quality answers,** regardless of which support professional assisted them. Consistency in service goes beyond the time required to answer the phone. Providing the same answer to the same question independent of person that answers the question is a level of consistency that customers have come to expect from a support center. They also expect the answers to be right. Answers documented in a knowledge base provide the support center the ability to test and validate the answers before they are repeatedly provided to customers.

Customer satisfaction increases when customers are provided the right answers to their questions in a timely fashion. A support professional's job satisfaction increases when they have the resources and ability to do their jobs quickly, and when they are given time to work on more challenging tasks.

Self-Service

Satisfaction is further improved for both the customer and the support professional when a support center successfully implements Knowledge Management for the customer. Up to this point we have discussed the effects of Knowledge Management when access to the knowledge base is made available to the support professionals. Allowing customers to self-service their problem or question is a phase Knowledge Management that is best implemented after success has been recognized in the support center. It is important to insure that the knowledge base has an adequate depth and breadth of knowledge to insure a high percentage of success prior to the customer's first attempt. You generally have but one chance to impress your customers in order to assure adoption of your new self-service offering, so make sure that works with your own staff.

The average cost of telephone support
\$25.00

The average cost of self-service
\$5.00

Source: 2002 Best Practices Report published by the Help Desk Institute

Now let's take a few minutes to understand how providing customers with access to this valuable resource can benefit the organization and the customer.

- **Self-Service is available 7x24.** Many support centers are unable to offer extended hours of assisted service. The support center's website is available when the support center staff is not.

- **Customers are less dependent on the support center.** Customers are becoming more Internet savvy. Many prefer to self-serve than to call someone for help. Through self-service, the support center can provide customers answers without the need to interact with the customer.
- **Self-Service equals Call Avoidance.** Whenever a customer can self-serve, they do not need to call the support center. This allows the support center to support more customers and/or products with the same staffing level.
- **Repeat problems are handled by the customer,** leaving the challenging problems for the support professionals to address. In other words, self-service lowers the number of simple problems that are handled by the support professionals each day.

A study published in the United States in 2002 by the Gartner Group reported that the average cost per call to a support center was about \$5.50 and the average cost per incident resolved via self-service was \$0.24. While the average cost per call may not compare to your organization, the magnitude of impact by self-service has been consistently reported by other research organizations. The 2002 Best Practices Report published by the Help Desk Institute claimed the average cost per phone call was \$25 and only \$5 for self-service. Self-service lowers the cost of support for each call by providing customers with direct access to answers via the Internet or intranet without the need for the costly interaction with a support professional. Customers receive immediate resolution and satisfaction while the support center is able to redirect staff to address other tasks.

Decreasing Costs

One reason that support centers invest in Knowledge Management is to decrease costs. This is not to imply that they have an objective of reducing their budget, but rather they are lowering the costs of various items in order to manage the growing costs of support. If we examine some of the benefits of Knowledge Management that have been previously mentioned, we can identify how the support center can decrease various costs.

- **Reducing the Average Call Time.** Reducing the time it takes to answer a customer's question not only allows the support professional to support other calls, it also reduces the cost of providing support for the call. Eliminating repetitive work and solving a problem once, reducing the time required to research a problem and answer, and reducing the time required to close a case are various ways Knowledge Management can reduce the average call time.
- **Increasing the First Call Resolution Rate.** The more problems answered on first contact, the fewer expenses related to costly callbacks and the time spent researching a case.
- **Reducing the Escalation Rate.** Lowering the percent of calls escalated to Level-2 or even Level-3 decreases the costs related to these more expensive resources.
- **Reducing the time required for a new support professional to become productive.** It is not unusual for a new support professional to be unproductive and a burden on the organization for a number of weeks. Getting them productive implies a faster ROI on the investment the support center has made in the new staff member.

- **Redirecting repeat calls to Self-Service.** Every time a customer solves his or her own problem, a costly support call to the support center is eliminated.

The sum of these cost reductions can have a big impact on the support center and will aid in the justification for implementing Knowledge Management. In addition to these direct costs, it is also important to recognize that the organization is investing in its intellectual capital. By capturing this knowledge in a knowledge base, the support center is increasing its value to the organization. This value can be difficult to measure until someone leaves the organization and takes their knowledge with them.

Forecasting the Return

Knowledge Management is an ongoing process of capturing, optimizing, and delivering information. It is not a one-time purchase of a new support center tool. Therefore to calculate the Return On Investment, you need to evaluate the cost of implementation and the cost of management. The cost of implementation relates to the initial purchase of software, hardware, communications, training, and services required for the knowledge base to be placed into production for daily use. The cost of management relates to the ongoing costs of maintaining the knowledge base and the infrastructure that was implemented.

While most support center managers are able to forecast the costs, they struggle to forecast the savings. This is partially because a number of the benefits of Knowledge Management are defined as soft dollars. Companies struggle to put a value on customer satisfaction, job satisfaction, quality service, or even the intellectual capital that is captured into the knowledge base. Another reason companies struggle is because they lack a benchmark. Before you can forecast an improvement, you have to know where you are.

Once you understand your current state, you must make reasonable forecasts regarding the impact Knowledge Management will have on your organization. The Knowledge Management vendors may offer to assist you with developing your ROI. Some vendors provide well-tuned and complex models. To simplify things, let's examine how some of the benefits can actually be converted to dollars. Before we begin, we need to make some assumptions about the support center. While these numbers may vary in your organization, the assumptions provide an example for this discussion.

Assumptions:

- A. *Number of cases per month is 5000*
- B. *Average cost per case is \$40.00.*
- C. *Average cost per escalated case is \$150.00*
- D. *Average burdened cost for a support professional is \$70,000.00*
- E. *Average talk time for first contact is 12 minutes*
- F. *Average talk time for escalated calls 18 minutes*
- G. *Time require for a new hire to be productive is 6 weeks*
- H. *Number of new hirers per year 8*
- I. *First call resolution rate is 40%*

Now let's examine how we might calculate a monthly return. You may want to modify these to focus on quarterly or annual impacts. When doing so, it is recommended that you adjust your

forecasted improvements based on your expectations of the adoption rate and implementation plans.

Reducing the Average Call Time on first contact.

Forecasted improvement: 1 minute

Savings = (Cases per month * Cost per case) * (Improvement / Talk Time for first contact)

Savings = (5000 * \$40) * (1/12)

Savings = \$16,667 per month

Increasing the First Call Resolution Rate.

Forecasted improvement: 20%

Savings = (Cases per month * Improvement) * ((Escalated Talk Time – Talk Time for first contact) / Talk Time for first contact) * Cost per call

Savings = (5000 * 20%) * ((18 – 12) / 12) * \$40

Savings = \$20,000 per month

Reducing the Escalation Rate.

Forecasted improvement: 5%

Savings = (Cases per month * Improvement) * (Cost per escalated case – Cost per case)

Savings = (5000 * 5%) * (\$150.00 - \$40)

Savings = \$27,500 per month

Reducing the time required for a new support professional to become productive.

Forecasted improvement: 3 weeks

Savings = ((Improvement * Number of new hirers per year) * (Average burdened cost of a support professional / weeks per year)) / months per year

Savings = ((3 * 8) * (\$70,000 / 52)) / 12

Savings = \$2,692 per month

Redirecting repeat calls to Self-Service.

Forecasted improvement: 10% of current cases redirected to self-service

Savings = (Improvement * Cases per month) * Cost per case

Savings = (10% * 5000) * \$40

Savings = \$20,000 per month

Developing an ROI for Knowledge Management in your support center depends on your current state, your implementation plans, your team, and your customers. The need for a formal ROI depends heavily on the senior management responsible for the support center. Some companies have minimized this focus because of an existing strong support from senior managers for Knowledge Management. Industry research groups such as Gartner, Forrester, Yankee, and others have well documented the value of Knowledge Management in the support center.

Selecting a Knowledge Management Tool

Once you understand how knowledge management can provide value to your support center, it is time to select the technology that will enable your organization. There are a number of options on the market and evaluating each of them would be costly. Before you open your doors to the vendors, develop your initial evaluation criteria so that your selection meets your needs. You can update your criteria as your evaluation progresses. Consider the following as you begin:

1. **Leverage your existing infrastructure.**

Knowledge Management is not best served stand-alone. The support center can save considerable time when the Knowledge Management solution is integrated with the Call Management solution. The support professional must be able to begin the knowledge base search based on the information in the case record. They must also be able to close a case quickly with information from the knowledge base. Integration between your knowledge management solution and your call management solution is a must.

2. **Provide diverse search options.**

Inexperienced users, such as customers and new hirers, need simple search options such as keyword and natural language searches in addition to the ability to browse the knowledge base. Search engines that support a Thesaurus allow for context sensitive results returning results based on synonyms. Advanced users, such as support professionals, required more advanced search options so that they can quickly search larger quantities of knowledge. Look for search engines that support Boolean operators, refined searches, and other advanced options. The ability to limit the search to specific segments of the knowledge base is must for support centers that support a wide variety of products.

3. **Leverage existing knowledge.**

Consider what and where information is currently in your organization. Knowledge may be stored in a variety of formats such as MS Word documents, PDF files, HTML or XML files. This knowledge is referred to as unstructured knowledge. Structured knowledge is usually maintained through a knowledge base tool and stored in a relational database or set of XML files. Each piece of knowledge contains a number of fields such as a title, problem description, cause, solution, product, author, and create date.

Important information may be available on file servers owned by sales, marketing, or engineering. While other departments maintain this information, access to this information is essential to delivering fast and accurate service. Consider the value of including this knowledge in your virtual knowledge base.

A Knowledge Management Tool Evaluation Checklist

- Integration*
- Search Options*
- Structured and Unstructured Knowledge*
- Authoring and Submitting*
- Workflow*
- Self-Service*
- Security and Segmentation*
- Management*
- Scalability*
- Training and Professional Services*

Support for unstructured knowledge that is stored in a variety of formats and servers is a high priority for support centers who depend on existing information.

4. Easily capture new knowledge.

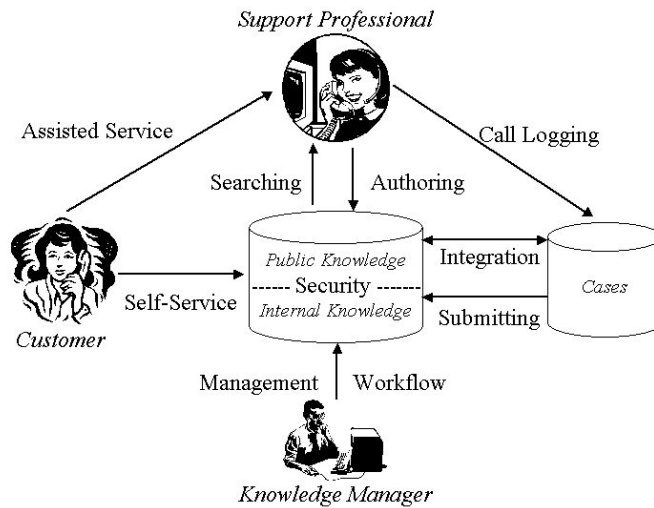
New knowledge can be either submitted from the call management system or authored by a support professional. When a support professional solves a problem and closes a case, they need the option to submit the information to be included in the knowledge base so that the next time the problem is encountered the solution will be available. Knowledge can also be created without the problem being reported to the support center. There must be an easy way for support professionals to author knowledge based on their experiences. Some knowledge management solutions provide templates to help the support professional author new knowledge.

5. Insure quality knowledge is delivered.

The knowledge management solution must provide workflow support so that your support center can test and review new knowledge before it is made available to customers. While new knowledge is valuable to the support professionals, raw knowledge may not have the quality grammar, presentation, or even accurate information in it. Granting customers access to such low quality knowledge can hurt the support centers reputation and service. A workflow process is critical to delivering quality knowledge.

6. Give customers a choice.

When you provide customers with direct access to your knowledge base you are also giving them a choice as to how they would like to answer their question. They can continue to contact the support center for assisted service or they can choose to use self-service. Whether you plan to implement self-service as part of your knowledge management initiative or not, you need to ensure that the tool you select provides you with the ability to implement self-service.



7. Limit their access as appropriate.

Not all knowledge is appropriate for everyone. The knowledge management tool must be able to secure knowledge from various audiences. Knowledge that is not quality ready for customers is still valuable to support professionals. Some information may be appropriate for engineering, but may be inappropriate in the hands of the sales force. The ability to segment and secure knowledge should be a high priority.

8. Manage the knowledge and the process.

Ensure that the tools you select allow you manage the knowledge in addition to search it. Look for functions that allow you to categorize the knowledge, date the knowledge, track the ownership, accept feedback, and analyze usage. Reports and metrics are necessary

tools for the knowledge manager.

9. Plan for broader usage in the future.

After the support center succeeds with its implementation of Knowledge Management, expect other departments to look to you. You may be providing support for more products or more customers, or you may be helping HR implement knowledge management. Understand how the tool you select will scale and perform as the needs grow.

10. Look for help.

Implementing Knowledge Management is about people, processes, and tools. Most vendors provide training on the use of their products or tools. You may need assistance or guidance on how to implement the processes and address the people issues. Consider the value of contracting a consultant or utilizing the professional services offerings of vendors to help you succeed.

Understanding your requirements before you review the various technical choices will minimize the time required for selecting a tool, and maximize the value of your selection. Doing your homework will increase your ability to successfully implement Knowledge Management.

Summary

Knowledge Management has become an essential practice within today's support centers. When combined with customer service and support software, the support center is able to improve efficiencies, increase satisfaction, and reduce the cost of service.

Knowledge Management is more about process and people than technology. When support professionals understand how Knowledge Management can benefit them and their customers, their resistance to the process changes is minimized. Providing customers the self-service choice expands the service offering by the support center while reducing the cost of support.

Support center managers can justify the implementation of Knowledge Management to their senior management by focusing on how to improve customer satisfaction and reducing the cost of service. Converting the benefits into dollars can be challenging but often essential to gain senior level support.

It is Gartner Dataquest's perspective that processes for managing intellectual capital and the supporting systems for IT professional services companies are rapidly moving from a "nice to have" status to a survival requirement.

Source: Gartner – September 19, 2002
"Knowledge Management to Thrive in IT Professional Services"

Selecting the appropriate Knowledge Management tool is the responsibility of the support center managers and not the IT organization. The tool must enable the organization to realize the expected objectives. One key requirement is that the Knowledge Management tool works well with the customer service and support software utilized by the support center.

The need for Knowledge Management is well understood. The time to plan your implementation is now.