

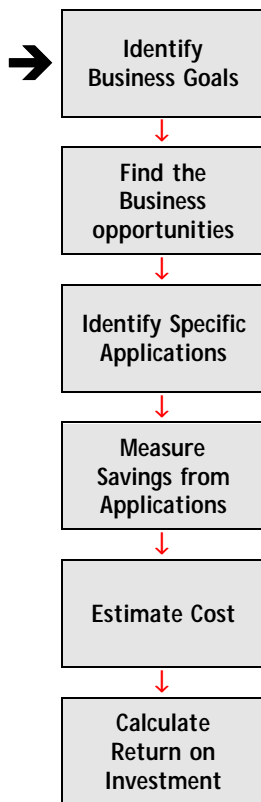
- Identifying business goals
- Mining for savings
- Estimating costs
- Selecting applications
- Calculating Return on Investment

- Recycle
- Republish
- Reduce
- Remove
- Relevance

Harvard Computing Group Report

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Knowledge Management – Return on Investment



Introduction

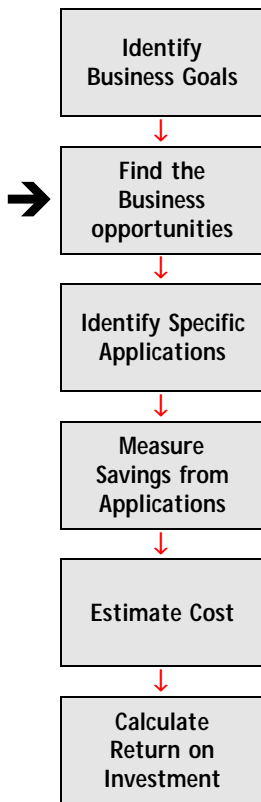
Knowledge Management and Return on Investment. Key subjects for many companies and organizations today, trying to find a way forward to determine and build a strategy. Knowledge Management has become a hot topic, and rightly so. The leverage of information in the organization has never been more important. A shortage of key staff, already a problem in most places, the need for more flexibility in the workplace, and the critical demand to better service customers are factors driving more companies to determine a Knowledge Management (KM) strategy and to do it fast. What is the purpose of these systems? HCG believes the primary focus is summarized in the following statement.

KM Systems allow organizations to store, disseminate, exploit and re-use corporate information and experience, with the goal of synthesizing knowledge to improve business operations.

These systems are making a difference to business, but that difference needs to be quantified before organizations will make a decision to change work processes, add systems and modify culture. Knowledge Management systems impact almost everyone in the organization when properly implemented. This impact can be measured in dollars. Developing a plan and clearly showing Return on Investment (ROI) for the changes and systems, needed to support the KM strategy, is the sure fire way of ensuring *real* support and *real* endorsement of the system.

Identify Business Goals

The amount of ROI is of little importance if the project does not support key corporate goals and have the buy-in of all the participants and corporate executives. Without buy-in the project is on precarious ground from the start. As an example, in the December 22, 1997, issue of *Information Week*, Tom Stein reported that SAP lost a federal contract after nearly six months of work and a \$10 million investment. A federal budget cut was cited as the reason; however, people on the project blamed "...the cancellation on a lack of executive support,



project overruns, and a desire to save jobs.” A contractor was quoted as saying “...people did not want the project to succeed.” This example clearly indicates the importance of well-defined and accepted Business Goals.

When determining Business Goals there is a tendency to gain agreement for the easier business goals instead of pushing for the tougher goals that may, in fact, have the highest value. Similarly, there is a tendency to fine-tune current processes instead of promoting the radical changes, that can produce exceptional returns on investment. The result is a generic set of Business Goals that do not have sufficient “teeth” to ensure the project will be supported through to completion.

Ideally, 3 to 5 business goals should be defined. These goals should contain specifics that can be used to measure the success of the project. Examples, of business goals might be:

- Create and distribute information that will allow new salespeople to become productive in their territory in half of the current start-up time.
- Create a Knowledge Base of information that will reduce calls to the support desk by 25%.

As the project proceeds, the applications that are defined should always be cross-checked with the business goals to guarantee that the project has not lost sight of the original objectives.

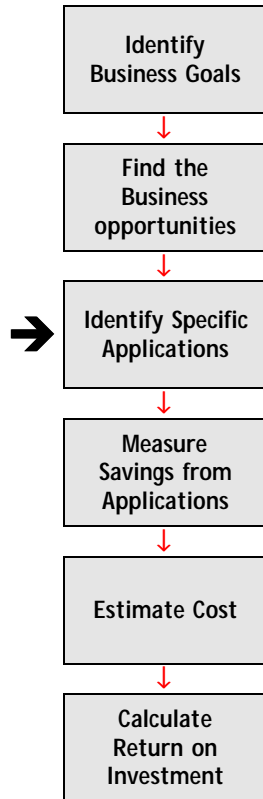
Mine for Savings

Once the Business Goals have been defined, the next task is to mine the organization for the applications to support those business goals. This is accomplished in three steps:

1. **Find the Business Opportunities.**
2. **Identify the Specific Applications** that will support those opportunities.
3. **Measure** the estimated **Savings** that will be recognized through the implementation of the applications.

Finding Business Opportunities:

At times the business opportunities are obvious. Other times there are excellent opportunities lurking just beyond the normal radar screen. For this reason, it is important to talk about the project; advertise it beyond the normal parameters of the project team. When other employees understand the nature of the project, they may be able to suggest their own opportunities for utilizing the information. As a result, it may be possible to uncover those hidden gems that can increase the project’s return on investment. For example: The original project’s objective may have been to build a knowledge base of product information which can be electronically published and used by Customer Support and customers alike. However, salespeople are also able to use the information in the database to come up-to-speed more quickly. As a result, the company can increase sales.



When searching for opportunities, apply the Five R's of Knowledge Management as a best practice for exploiting the business case opportunities. The Five R's include:

1. **R**ecycle - Use the same content in many places.
2. **R**epublish - Publish the same content in many forms.
3. **R**educe - Create a single source for content.
4. **R**emove - Utilize a streamlined process for content management.
5. **R**elevance - Apply standards for content quality and usefulness.

Identify Specific Applications:

Identifying the specific applications is easily completed once the opportunities have been found. The goal is to determine the applications that will satisfy the business opportunities. For example, customers and employees need access to information.

1. You need to compile the information into a knowledge base.
2. You need to develop a mechanism that allows people to access the information that will be published electronically.
3. You need to provide tools that allow people to find specific data within the knowledge base.
4. You need a way of maintaining the information in the knowledge base.

Once you have determined what the application needs to accomplish, you must briefly consider how it will be used. Examples of questions are:

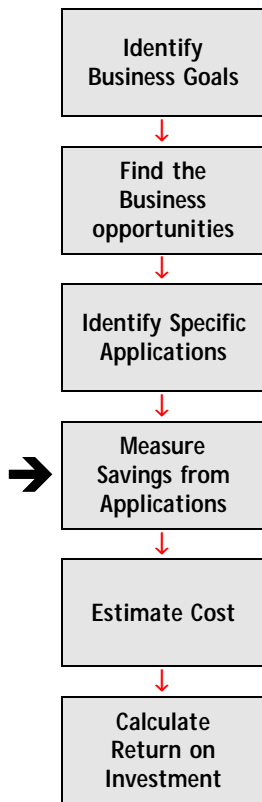
- What is the work process?
- Does the process need to be enforced by a workflow product?
- Should there be remote access?
- What are the security requirements?
- How many people will be maintaining the system?
- How many people will be using the system?

When these questions, and questions like them are answered, it is possible to create a model of the system and how it will be used.

Measure Savings:

When the opportunities have been understood and the specific applications identified, the next objective is to measure the savings related to the implementation of the new applications. This is completed by documenting the expenses associated with tasks in the current environment. These expenses may be for staffing, travel and transportation, or materials.





The following are examples of questions that may be asked while you are mining for savings.

- What is the level of effort required by an employee to support their customers?
- What are the costs associated with updating and shipping revised copies of our documentation?
- How many visits and how much on-site time is required in order to implement a new customer?

A table is used to document the current expenses. The following is a sample of the categories that might be included in such a table.

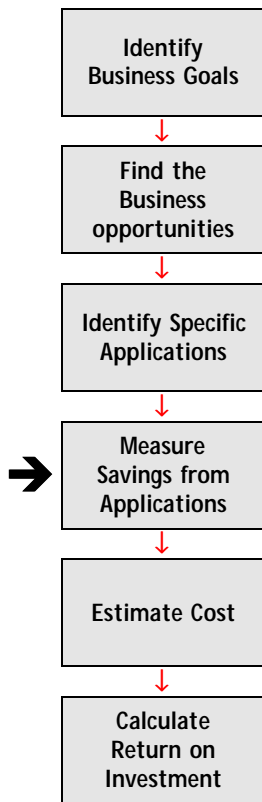
Sample Current Expenses to Complete Tasks – Table A

Tasks	# of People	% of Time	FTE	TT&M	Other	Description
Document Management	10	20	2			
FAQ*	10	25	2.5			
Best Practices	20	50	10			
Distribution of Knowledge	20	15	3	\$18,000		Publishing, Telephone, and Distribution Costs
			17.5	\$18,000		

*Frequently Asked Questions

- Tasks:** The jobs that will be impacted by the new applications.
- # of People:** The number of people that are currently required to complete the tasks.
- % of Time:** The percentage of a person's day that is spent completing the task. If a task occupies a full day, once a month, that is calculated to be roughly 5 percent of someone's time.
- FTE:** Full Time Equivalent = Number of people multiplied by the percentage of time spent.
- TT&M:** Travel, Transportation or Materials. This column represents expenses that can be quantified. For example, postage and lodging. The Description column defines what is included in this column.
- Other:** Any other expenses associated with this task.
- Description:** Defines the information in the TT&M and Other columns.

Once the expenses of the current environment have been identified, the next objective is to estimate the savings that may be realized when the new applications are implemented.



The following are examples of where the savings may be realized.

Staff:

Employees may be able to complete their job requirements more efficiently.

Customers may demand fewer employee resources because other resources have been made available.

Savings and/or Revenue may be recognized when new employees become productive more quickly. For example, new salespeople may close sales sooner.

Travel & Transportation:

Customers may require fewer on-site visits because of applications that are provided to help them resolve the problem.

Time at customer sites may be more productive.

Materials:

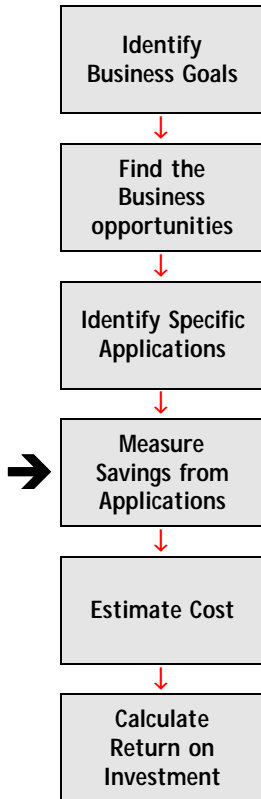
Paper, CDs, Copying, Postage, Equipment, and Telecommunications costs may be reduced.

The same table is used to calculate the estimated savings or any additional revenue that may be realized.

Sample Estimated Expenses/Revenue with New Applications – Table B

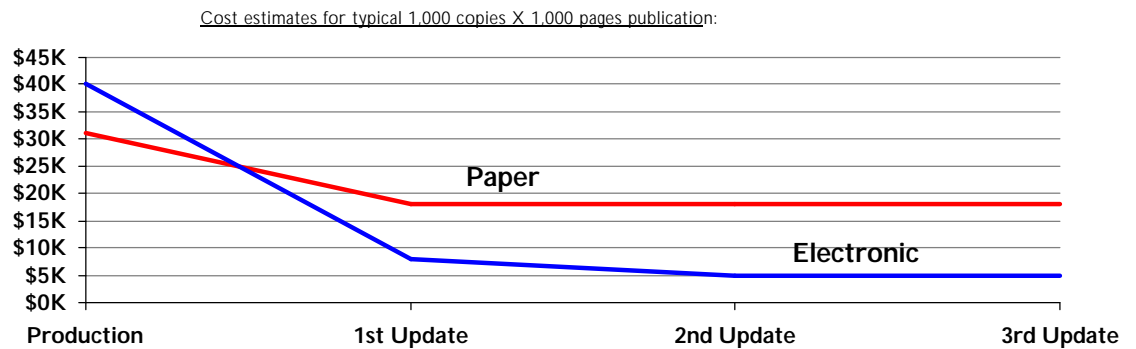
Tasks	# of People	% of Time	FTE	TT&M	Other	Description
Document Management	10	10	1			
FAQ	10	10	1			Increased Help Desk Productivity providing easy access for employees and customers to Frequently Asked Questions
Best Practices	20	25	5			New employees will come up-to-speed in 3 months vs. the current 6 months
Electronic Distribution of Knowledge	0	0	0	\$5,000		Significant savings in publishing and telephone costs. Using knowledge base increases productivity by 3 employees
			7	\$5,000		





The following graph prepared by Osnat Consulting, reflects the long-term cost structure associated with paper versus electronic delivery of information. Paper delivery has high production, updating, shipping and storage costs. Electronic delivery has a high initial investment in software, design, data preparation, prototyping and quality assurance; however, over time, the reduction in updating, shipping, and storage costs outweigh the initial investment.

Long-Term Cost Structure – Example



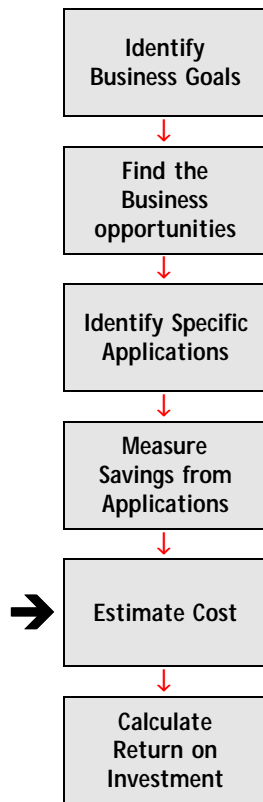
Graph shows higher initial costs for Electronic Publishing solution for a Knowledge Management application, then significant savings after the first and subsequent updates. Most Knowledge based applications require continuous publishing cycles.

Cultural Considerations:

Accurately measuring the savings can often be a difficult task. Many things may motivate employees to underestimate the savings or additional revenue:

- Salespeople may be concerned that their quota will be tied to the new revenue projections.
- Managers may perceive that they will be forced to reduce headcount and be required to continue to produce at the same levels or higher levels.
- Employees may fear their performance will be directly measured by their success in meeting the estimates.

In truth, all of these fears may, in fact, become realities. We would all like to believe that the only reason a company undergoes this effort is to improve employee productivity so that resources can be redirected to producing better products and/or improving customer satisfaction. Unfortunately, that is not always the case. The point is: *Be aware of the cultural aspects that may be influencing the estimates and handle them appropriately.*



Estimating Costs

Having identified the applications and roughly estimated how they will be applied, the next objective is to estimate the costs of buying or building, implementing, and supporting the new applications.

First, we must examine each application and determine the following costs:

- Hardware: Server, Desktop, Network
- Software: Server, Desktop, Network. One-time purchase or development costs
- Implementation: One-time consulting, database population, conversion, training, and testing costs.
- Support (maintenance): Annual System administration, support, and maintenance costs.

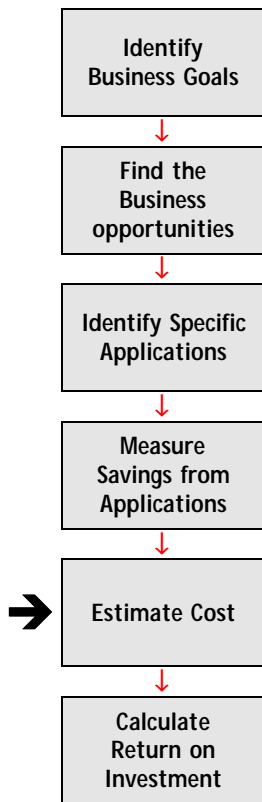
The following table may be used to accumulate the application information.

Sample Estimated Systems Requirements – Table C

Applications	Document Management	FAQ	Best Practices	Distribution of Knowledge
Hardware Requirements: Server Desktop Network	NT Browser TCP/IP	NT Browser TCP/IP	NT Browser TCP/IP	NT Browser TCP/IP
Software: Server Platform Desktop Platform Network Platform	Doc Mgr. And Web Server Browser TCP/IP	IIS, Forms and Email FrontPage 97/Browser TCP/IP	Web Server FrontPage 97/Browser TCP/IP	Web Server Browser TCP/IP
Implementation: Consulting (internal/external) Database population Conversion Training Testing	30/days 90/days	4/days 5/days	15/days 5/days 5/days 2/days	
Maintenance: System administration Support Maintenance	12/days 6/days 6/days	1/days 10/days	8/days* 12/days	
Totals: One Time implementation One time Development	\$74,250 \$40,000	\$1,625 \$3,650	\$24,125	
Total One Time Costs	\$114,250	\$5,275	\$24,125	
Annual Maintenance	\$7,800	\$3,575	\$6,000	
GRAND TOTAL (One Time Costs)				\$143,650

* Administration for Electronic Publishing is generally 2 days per publishing cycle which typically occurs every three months.



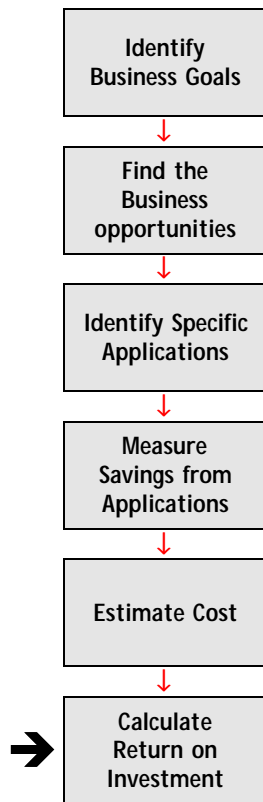


The second step is to estimate the cost of the technology infrastructure that will support all of the applications. Ideally, the goal is to identify a common infrastructure for all applications. An infrastructure that supports many of the applications, will allow its cost to be distributed and measured against the savings or revenue derived from the applications that it supports.

A table is also used to capture the system requirements and costs of the base infrastructure.

Sample Technology Infrastructure Requirements – Table D

System Requirements	Description	Cost
Production Platform - Server: Hardware Software	HP Net Server LX IIS Back Office Front Page 97 Oracle 7	\$24,000 \$1,000 \$100 \$2,000
Operating Systems Network Operating System	NT TCP/IP	
Development Platform - Server Hardware Software	HP Net Server E Series IIS Office Pro Oracle FrontPage 97 Acrobat Distiller	\$6,000 \$400 \$100 \$5,000
Operating Systems Network Operating System	NT TCP/IP	
Publisher /Creator Interface Hardware Software	PC Front Page 97 Insight Publishing Tool Office Pro 97	Existing \$100 \$12,500 Planned
Operating Systems Network Operating System	various TCP/IP	
Developer Tools Hardware Software	PC Web Tools/TBD Office Pro 97	Existing \$5,000 Planned
Operating Systems Network Operating System	various TCP/IP	
Data Connections – External access to system Hardware	Remote access router Security consulting	\$12,000 \$5,000
Telecommunications		\$1,000
Web Developer/Administrator		\$75,000
Total Capital Infrastructure Costs		\$74,200
Per Annum Costs: Basic Infrastructure Maintenance Per Annum Basic Staff Cost per Annum Capital Cost per Annum		\$11,580 \$75,000 \$25,734
Estimated Operating Cost per Annum		\$112,314



Calculating Return On Investment (ROI)

Calculating the Return on Investment is, in some ways, the easy part. Once you have identified better methods of working, projected savings and what it will cost, you merely need to put the numbers together.

Often the most difficult aspect of calculating the ROI is putting the numbers together in a way that meets your own organization’s financial and budget policies. For example, payback periods may vary depending upon how capital purchases are treated and amortized in the organization. Also, the organization’s cash flow may require the cost of borrowing money to be included in the equation.

The following table extracts information from all of the previous tables in order to calculate the ROI. As a result, this table represents all of the factors for each new application. For this exercise we have assumed that your organization writes off capital purchases over a three-year period, which is increasingly common in the United States.

In general, it is recommended that organizations are conservative in estimating savings, and are more aggressive on cost estimates. By taking this approach there is a greater likelihood of meeting and beating the estimated Return on Investment, thereby satisfying management and staff alike.

Return on Investment Calculation – Example

Application and Infrastructure	Incremental Costs (A)	Return/Savings (B)	Annual Maintenance Costs – (C)	Annual Savings (D)	Return on Investment
List each application defined on the other tables Also include a line item for the Technology Infrastructure information from Table D	Additional costs in hardware, software, consulting, training and development costs <i>From Table C: Total One Time Costs</i> <i>For Infrastructure – From Table D: Total Capital Infrastructure Costs</i>	Anticipated annual savings excluding incremental costs <i>From Table B: FTE multiplied by average cost of FTE plus additional savings/ revenue from TT&M or Other.</i>	Annual costs of maintaining the system <i>From Table C: Annual Maintenance</i> <i>For Infrastructure – From Table D: Total Estimated Operating Cost Per Annum</i>	Actual Annual Savings expressed in dollars with costs subtracted $B - (A / 3 + C)$	Savings divided by incremental costs (divided by three for capitalization schedule) plus annual maintenance costs. Result is expressed as percentage $D / (A / 3 + C)$
Sample Grand Total	\$109,625	\$284,375	\$7,800	\$240,033	541.33%



By using the matrix on the previous page, and applying it to a spreadsheet it is simple to establish cost savings and Return On Investment for your Knowledge Management applications.

Further Information

For further information on Knowledge Management applications and ROI assistance, please call the Harvard Computing Group at 978 692 6766.

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