Custom KM: Implementing the Right Knowledge Management Strategy for Your Organization

by Amrit Tiwana

Knowledge management (KM), like any other complex organizational activity, cannot deliver business results without a concrete plan. Unfortunately, a disproportionately large number of companies that have been attempting to implement knowledge management have found the experience much like trying to nail jelly. When not approached appropriately, it’s hard to accomplish, the outcomes are uncertain, and it eventually creates an expensive mess.

The questions that managers often ask focus on the “hows” of knowledge management. How do we implement a KM strategy? How do we link KM to business strategy? How do we decide on the balance between KM systems and “soft” enablers? How do we know that it will work, before we pour down hundreds of thousands of dollars into a system that we are not sure about? How do we know that it’s even working? This article seeks to answer a few of these questions.

In this article, I describe a multistage results-driven process for successfully implementing KM in your company. This process is based on 18 months of research involving several US and foreign companies and their trials and tribulations in implementing KM. Before we get to the process, let’s get a grasp of what’s been going wrong with many KM initiatives in dozens of companies over the two-odd years in which KM has gained much favor.

THE TWO POINTS OF FAILURE

Knowledge management projects in many companies that I have researched have fallen into two notable predicaments: methodological rigidity and technological determinism. The first critical point of failure lies in attempting to implement KM using a methodology rather than a contextualized set of processes.

Methodologies come from two camps — technology vendors and consultants. A glance at vendor-driven methodologies at any KM trade show reveals that their claimed promise is simple: “Implement our tool, and you’ve solved your KM problems.” You’ve probably heard vendors of photocopiers, printers, word processors, search engines, PCs, wireless networking services, document scanners, workflow tools, and enterprise software all make the same claim.

Most of us wish it were that simple, but the many companies that I’ve researched prove this claim dead wrong. Consultants are the better lot; they at least recognize that something beyond technology alone is needed. But consultant methodologies are often driven by a few successful experiences with their clients. While such “cases” are excellent ways of understanding how systems were successfully deployed in those companies, such examples are an extremely dangerous way of developing your own KM strategy.

Effective knowledge management must be grounded in organizational context and business strategy, not gleaned from the best practices of your competitors. A KM system can copy the competition’s technology,
but not its context. Design, development, and deployment of a system to support knowledge management must therefore be carried out with only one organization in mind — yours.

The second critical point of failure lies in overdependence on technology. Technology, unfortunately, is neither the archdemon nor the savior of the knowledge economy. Technology helps collect, store, transfer, and distribute information. Information does not necessarily translate to knowledge, for much knowledge is too tacit and too obliviously ingrown in people’s heads to be codified — let alone transferred electronically. Technology is merely an enabler, and this enabler can rarely produce the same results in two different organizations, however similar they might be. This implies that knowledge management is first a process problem and then a technology problem. The technology part is easy; it’s the process part that stumps many companies.

From Methodologies to Processes
Using the term methodology relegates KM implementation to the status of a well-formulated task that can be executed in almost the same way in just about any organization and still deliver the same results. But no two companies, however similar, are exactly alike. Using this term to describe the process undermines both its company specificity and its complexity. Instead, knowledge management must be approached as a series of processes, following a customized road map rather than context-insensitive methodological steps.

Successful knowledge management must go beyond methodologies and focus instead on business processes. The challenge to be addressed lies not in knowing the right answers but in asking the right questions. This article introduces the 10-step knowledge management implementation road map (detailed further in my new book) that helps companies arrive at those questions.

THE KM ROAD MAP: THE FOUR PHASES
Implementing knowledge management can be thought of as a four-stage process.¹

The four stages (see Figure 1) comprise 10 necessarily sequential steps, as discussed later.

1. **Infrastructural leverage.** Analyze existing IT infrastructural capabilities, audit formal and informal communications channels, identify key repositories

![Diagram of the four stages of the 10-step KM implementation process]

Figure 1: The four stages of the 10-step KM implementation process

and high-volume databases, and evaluate communication/network capabilities. Identify strategic business processes that must be supported, analyze strategic gaps, and identify knowledge gaps through simultaneous analysis of business strategy and IT capabilities.

2. KM system analysis, design, and development. Audit knowledge assets and their current state of explication and formalization. Next, select a cross-functional and, if necessary, cross-institutional KM implementation team. The extent to which this team represents various divisions of the organization largely determines the level of acceptance that the system will finally achieve. This team then brings together knowledge of business processes and technology to deliberate and reach consensus on the actual design of a system to support knowledge management. The choice between codification and personalization as the primary focus of knowledge management must be made at this stage.

3. Results-driven incremental deployment. Deployment of a knowledge management system includes two distinct but interrelated steps: (1) implementation of the system itself, and (2) implementation of the cultural, motivational, and reward structure-related incentives that motivate both its acceptance and use. Implementing the right technology without the right change management processes is a policy destined for failure.

4. ROI and performance evaluation. You cannot control what is not measured. After a knowledge management system is implemented, how do you determine whether it was worth it? Metrics are, by far, the trickiest part of any IT investment. The debate over the value of IT has preoccupied many academics and practitioners over the past decade, and many books and journals have been witnesses. The gulf between what should be measured and what is actually measured is wide — often misleadingly wide. Metrics are often considered like balance sheets — they can be tweaked just about enough to show that even the most worthless investment was worth every penny invested. Proof aside, accurate metrics are needed to guide further resource allocation to either the knowledge management system or to other projects. In the context of KM, two metrics are appropriate. The Balanced Scorecard method, which has been well described for guiding strategic IT investments, is one feasible option. The second viable alternative is quality function deployment (QFD) — a method that has been used by heavy manufacturing industries for several years now. Only when these returns are accurately measured — not by hard measures like net present value analysis, financial ROI estimates, or cost-benefit analyses, but by composite metrics — can a company even begin to judge how its KM strategy is faring.

The Road, the 10 Steps, and the Infinite Loop
The four phases described above can be broken down into a total of 10 steps (see Figure 2). These steps describe processes that must be executed to arrive at a KM solution that is grounded in your own organization’s context. Many of these steps are necessarily described at a high level here, as it would be misleading to provide context-oriented information that is not relevant to your organization. (Remember: in
Figure 2: The 10-step knowledge management road map
I'd argue that there are occasions—many occasions—where $50 speaker phones serve employees better than a comprehensive Notes system.

1. **Analyze the infrastructure that already exists.** Take into account all IT infrastructural capabilities, present utilization levels, level of scalability, and expansion plans in the works. Evaluate your company's existing networks, intranet, groupware tools, and extranets. Also collect a high-level set of specifications for data mining, data warehousing, project management, and DSS tools that might be used at any location within your company boundaries as they apply to your planned KM initiative. This will help you recognize the limitations of implemented tools and identify gaps in your existing infrastructure. Further, this information will provide you with the basis for leveraging these infrastructural components and anticipating integration problems before they surface.

2. **Align KM and business strategy.** Identify knowledge gaps associated with gaps in your company's or department's business strategy. This is a complex though critical step. Depending on the competitive orientation, team structures, profit margin considerations, employee appraisal methods, and economic philosophy specific to your organization, you must adopt codification or personalization as your knowledge management strategy's focus. While codification depends heavily on the storage aspects of IT support, personalization depends heavily on its communication capabilities. Accordingly, technology design diverges in almost-opposite directions from this point onward. Many companies have fatally erred in making this choice without rigorous upfront analysis and eventually invested heavily in the wrong type of IT-based support mechanisms. While many Lotus Notes proponents might argue that you can never go wrong by using Notes, I'd argue that there are occasions—many occasions—where supplying $50 speaker phones would have served employees better than a comprehensive Notes collaborative system. Table 1 provides a basic set of quick-and-dirty diagnostic questions that will help you determine your own company's knowledge leanings. Initiatives to sell KM both to senior management and to end users (employees) must be mobilized in this step.

3. **Identify components of the knowledge management infrastructure.** Components from step 1 that support your chosen knowledge management strategic orientation must be selected next. Depending on your focus, you must identify infrastructural components to find, create, assemble, and apply knowledge. This includes the difficult choice of collaborative platform (say, Web or Notes); selection of the elements of the interface layer, including clients, server, gateways, and the platform; and identification of constituents of the collaborative intelligence layer, such as artificial intelligence, data warehouses, genetic algorithm tools, neural networks, expert reasoning systems, rule bases, and case-based reasoning tools. Push-versus pull-based delivery, searching, indexing, and retrieval support mechanisms must be appropriately balanced.

---

8See Chapter 6 of The Knowledge Management Toolkit for detailed process descriptions.
<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Codification</th>
<th>Personalization</th>
</tr>
</thead>
<tbody>
<tr>
<td>How does work progress?</td>
<td>Employees reuse portions of old documents to create new ones, and existing products to create new ones. They know that every time you have to deliver something new to a customer, you need not begin from scratch.</td>
<td>Every problem has a high chance of being a “one off.” Although cumulative learning is involved, creative solutions are often needed.</td>
</tr>
<tr>
<td>What is the typical team's structure?</td>
<td>Large teams: most members are junior employees.</td>
<td>Senior and junior members work in proportionate numbers.</td>
</tr>
<tr>
<td>How do you compete?</td>
<td>Price-based competition</td>
<td>Expertise-based pricing; high prices are not detrimental to your business; price-based competition barely exists.</td>
</tr>
<tr>
<td>How thin are your profit margins?</td>
<td>Very low profit margins; your company's focus is on revenue maximization.</td>
<td>Very high profit margins.</td>
</tr>
<tr>
<td>How do employees share knowledge?</td>
<td>Employees refer to a document or best practices database that stores, distributes, and collects codified knowledge.</td>
<td>Knowledge is transferred person-to-person; Intrafirm networking is encouraged to enable sharing of tacit knowledge, insight, experience, and intuition.</td>
</tr>
<tr>
<td>How can KM be economically sustained?</td>
<td>Economies of scale lie in the effective reuse of existing knowledge and applying it to solve new problems.</td>
<td>Economies rest in the sum total of expertise available within the company.</td>
</tr>
<tr>
<td>What should IT do to help?</td>
<td>IT is a primary enabler; the objective is to connect people distributed across the enterprise with codified knowledge that is stored in some reusable form.</td>
<td>Storage and retrieval are not the primary applications of IT. IT provides communications channels; conversations, socialization, and exchange of tacit knowledge are considered to be the primary use of IT.</td>
</tr>
<tr>
<td>What should be IT's role?</td>
<td>IT provides high-quality, reliable, fast, and cost-effective services. Intranets and Lotus Notes-type databases are in place here.</td>
<td>IT provides creative, rigorous, and highly customized services and products. Mechanisms for tacit knowledge sharing (video delivery, multimedia content, audio streaming) are a must.</td>
</tr>
</tbody>
</table>

Table 1: What's your knowledge management orientation?

Most importantly, the aforementioned choices must be reevaluated against the type of knowledge management support required for the strategy chosen.

4. **Audit existing knowledge assets.**

Existing knowledge assets in your organization must be audited. The granularity of this audit depends on three factors: available time, allowable budgetary constraints, and appropriateness for codification versus personalization of knowledge-centric content. Roger Bohn's Stages of Growth framework can be used to identify, measure, evaluate, and rate critical process knowledge assets at this stage. An audit team that is well representative of corporate units that will be affected by your KM system must carry out this evaluation. Finally, a suitable strategic orientation for the knowledge management system must be selected (this might be different from the overall KM strategy per se).

5. **Assemble the KM team.** The team that will handle the actual design and development of the knowledge management system must be formed next. This requires identifying the sources of requisite expertise. The composition of this team must be based on the findings of the preceding step, and the team should be organizationally, strategically, and technologically well balanced. This

---

team must also be capable of synergistically handling four failure points that I have frequently encountered in KM projects: requirements determination, control, management buy-in, and end-user buy-in. Team sizing issues and the balance of technical versus managerial expertise must be addressed in this step.

6. **Create the KM blueprint.** A technical architecture for your KM system must be developed next. Evaluate, double-check, and select each layer of this architecture for its fit with the requirements determined from Step 2. Repository lifecycles, performance considerations, and scalability for future use must be explicitly considered at this stage. Your KM team's members and corporate stakeholders must agree upon requirements specifications, user interface considerations, and the scope of the initial system. This blueprint must be designed in a future-proof manner, because subsequent changes at the architectural level are expensive, if possible at all.

7. **Develop the KM system.** Specifications from the blueprint in Step 6 must be translated into an actual system. A KM system must move from a client-server-only orientation to an agent-distributed computing one. Accordingly, the low-level design of each of the system's seven layers must be initiated. Steps 7 and 8 are the only two steps that violate the sequential order of processes: Step 8 begins before Step 7 is completed, and it feeds back into the actual system's design.

An interface layer front-end, based on a Web browser client, is highly recommended. This offers at least four benefits: (1) it creates platform independence, (2) it leverages the corporate intranet, (3) it enables universal, distributed content authorship, and (4) it enjoys stability afforded by open Web standards. The access and authentication layer immediately below the interface layer must secure data, control access, and distribute control. Below this, the collaborative filtering and intelligence layer is built on static and mobile intelligent agents (which are also used in most leading collaborative tools).

The transport layer provides electronic channels for "rich" content to flow across the enterprise. Assuming that you already have a corporate network in place, this will be the layer that needs the least amount of additional work. A middleware and legacy integration layer below the transport layer connects mainframe legacy data, incompatible platforms, and inconsistent data formats distributed across the enterprise and retired systems.

At the bottom is the repository layer. This depends on existing repositories, Notes databases, rationale capture systems, and additional repositories that Steps 3 and 6 necessitate. Document management systems can be integrated at this level through the Document Management Alliance's (DMA) WebDAV standard for explicit content and documents handling.

8. **Deploy the system using results-driven incrementalism.** KM system deployment must begin with a nontrivial and representative pilot project that serves as a proof of concept. A prototype that end users can see and touch and provide feedback on not only ensures that it meets their expectations but also increases the level of end-user
buy-in. Potential failure points and traps can be identified in advance, before the entire system is developed. Conventional systems development methodologies such as the “waterfall model,” systems development lifecycle (SDLC), and “spiral model” fall apart when used to develop a KM system. Instead, use the results-driven incremental (RDI) methodology. Using an RDI approach ensures that each component is producing expected benefits before the next one is developed and deployed. Not only does this maximize potential payoffs, it also ensures that each subsequent development step is constructively influenced by the results of the preceding steps.

9. Manage change, implement reward systems, and remove cultural barriers. “Build it and they will come” is a passé notion in the knowledge economy. Implementing a system to support knowledge sharing is the easy part; making your employees use it — and love it — is an altogether different story. Begin this step by deciding whether you need a formally appointed chief knowledge officer (CKO) to lead the KM initiative. Most companies that rushed to appoint a CKO have begun to realize that a senior manager can handle that function concurrently. With much personal disdain for this title, I continue to use it here for the lack of a better term. Whatever you decide to call the CKO’s surrogate, remember that most successful managers playing this part have been with their company for a while and have risen through different ranks. As such, they have both managerial and technical experience — a duality that is necessary for this role. This KM champion must implement cultural change and process triggers to make KM succeed in your company.

Sharing knowledge is not normal behavior in the typical corporate environment, where job security depends on an employee’s knowledge. Very compelling incentives, cultural enablers, and reward structures are needed to make that happen. The burden of devising these incentives falls on the shoulders of the CKO.

10. Evaluate performance and analyze ROI. Benchmarking, the Balanced Scorecard method, and quality function deployment can be used for creating strategic knowledge metrics. Conventional accounting and IT metrics do not do justice to KM projects because their focus is too much on hard returns. Many of knowledge management’s returns are not measurable that directly. Yet the need for some quantitative metrics remains if these are to drive further investment. The solution then lies in creating a composite metric based on the aforementioned methods. This metric can be used to benchmark returns both internally and against competitors (and industry averages). Balanced scorecards and QFD matrices can be managed using one of many commercial software tools developed for this purpose.

The Infinite Loop
The final step does not indicate the end; it signals a new beginning — the next incremental iteration. Like most other IT projects, a KM system must be continually refined. Based on the post-implementation analysis of metrics, user feedback, and evolving needs, the system must be improved upon.

---

To ensure that members of your KM team are familiar with the intricacies of the process, take one or more of the following steps:

- Attend a knowledge management conference to see the tools and technologies available to assist in developing a knowledge management system. KMWorld (www.kmworld.com) has an annual conference that attracts KM consultants, software vendors, and users. In addition, several trade magazines provide interesting reading on new developments. The notable one is the British magazine Knowledge Management (www.knowledge-management.co.uk). Others include Knowledge Management magazine (www.kmmag.com) and Knowledge Management World (www.kmworld.com).

- Acquire, read, and distribute one of the few books on knowledge management. Thomas Davenport and Laurence Prusak's Working Knowledge (Harvard Business School Press, 1998) is an excellent bare-bones introduction to the topic. The author's new book, The Knowledge Management Toolkit, provides an in-depth treatment of the strategic and technical aspects of knowledge management design, development, and implementation, along with a detailed set of interactive diagnostics.

- Follow developments on Web sites dedicated to knowledge management. MIT's Center for Organizational Learning (learning.mit.edu), Buckman Laboratories' Knowledge Nurture site (www.knowledge-nurture.com), and The Knowledge Management Toolkit home site (www.kmtoolkit.com) provide excellent pointers.

CONCLUSION

Knowledge management is an inherently challenging task. The reward is a competitive advantage that may be envied by many competitors but not replicated by any. To be successful, you need to add the component that does not come bundled with any process model — managerial instinct. Be wary of polished cases and war stories; instead, keep your company in mind. What works great elsewhere will not necessarily work in your company. It should not, because true knowledge is not easily copied. And remember, technology is the easy part. Making knowledge management effectively produce results is the real challenge. When allocating resources, plan to spend the most on post-implementation initiatives and less on the support system itself. As the ages-old legend holds, a task begun is half finished. Begin with what you have, provide communications channels, and do not be overly obsessed with the perfect database or repository. Avoid the trap of trying to manage every iota of knowledge in your company — a trap that has sent many knowledge management projects down the tubes. Pragmatism, not perfection, is key.