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Project Personnel and Copyright

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STATEMENT OF PURPOSE
The purpose of publishing this report is to provide a reference point for insight into the processes and practices associated with certain issues. It should be used as an educational learning tool, not a “recipe” or step-by-step procedure to be copied or duplicated in any way. This report may not represent current organizational processes, policies, or practices because changes may have occurred since the completion of this study.
Research Champion

Sponsor Organizations

- Bush Brothers & Company
- Cenovus Energy Inc.
- Deere & Company
- ExxonMobil Corp.
- Husky Energy Inc.
- Intel Corp.
- Johnson & Johnson
- Nexen
- Occidental Petroleum Corp.
- OMV Petrom S.A.
- Praxair Inc.
- Sealed Air Corp.
- Suncor Energy
- Vale S.A.

Partner Organizations

- Accenture
- Kraft Foods Group Inc.
- Lloyd’s Register: Marine
- Lockheed Martin
- U.S. Department of State
- Wipro Ltd.
Introduction

Over the past 18 years, APQC has conducted numerous research studies to identify proven practices that enable knowledge to flow in order to help people innovate, collaborate, solve problems, grow professionally, and perform their jobs more effectively. In early 2013, APQC decided to launch a new Best Practices Study on strategies and processes for capturing, transferring, and applying critical knowledge. This represents its third study on this topic, following *Retaining Valuable Knowledge* (2002) and *Retaining Today’s Knowledge for Tomorrow’s Work Force* (2008).

Why a third study in this area? There were several reasons. First, knowledge capture and transfer were identified as hot issues for our members during a community call in January 2013. Second, upon doing further research, we noticed a renewed sense of urgency among knowledge management (KM) practitioners charged with knowledge capture and transfer in their organizations. We believe that the growing interest in knowledge capture and transfer stems from changing demographics (the Baby Boomers are finally retiring!), the pace at which knowledge and skillsets are evolving, and new technologies that make it increasingly difficult to pinpoint critical knowledge among the masses of data and information available inside and outside organizations. Many firms simply are not prepared for the challenges facing them.

All these trends—changing demographics, changing skillsets, and new technologies—point to a need to:

- identify the knowledge that your organization needs to succeed;
- separate it from the noise; and
- document it so that it’s available when, where, and how employees need it.

Over the course of this study, APQC and the sponsor organizations examined the knowledge capture, transfer, and reuse programs at six best-practice organizations (also referred to as best-practice partners). The research team’s goal was to unravel not only how the organizations document and share knowledge, but also how they enable access to that knowledge and ensure it is applied in new contexts. While learning from the best-practice programs, APQC observed two fundamentally different attitudes toward identifying, capturing, and transferring knowledge. Whereas some of the partners have systematic processes to pinpoint critical knowledge from experts and ensure it is passed on to the next generation, others favor more organic approaches in which teams and individuals are empowered to share knowledge they believe colleagues will find relevant and valuable.

One objective of this report is to tease out the nuances of these different strategies and how they enable effective knowledge transfer and reuse at the organizations that have adopted them. Another objective is to explore the relationships between the best-practice KM programs and the business groups they support. Regardless of the specific tools and
approaches used, all the partners engage business leaders and representatives to help design their transfer and reuse strategies, determine what knowledge should be captured, and engage their workforces in desired knowledge-sharing behaviors. It is APQC’s belief that these close partnerships between KM and the business are central to the success and sustainability of the best-practice organizations’ programs.

The Best Practices

As part of this research, the study team identified 19 best practices associated with identifying, capturing, transferring, and applying critical knowledge. These 19 best practices, categorized by theme, are listed below.

CREATING A STRATEGY AND PROCESS TO PROTECT CRITICAL KNOWLEDGE

1. Create a comprehensive knowledge capture and transfer strategy focused on business continuity.
2. Let business leaders drive the strategy and process, with KM functioning as an enabler.
3. Design the strategy and process with an understanding of the organizational culture and "appetite" in mind.

IDENTIFYING CRITICAL KNOWLEDGE

4. Let business leaders and experts determine what knowledge is critical, but provide criteria to support their decision making.
5. Leverage a combination of top-down and grassroots approaches to identify critical knowledge.

CAPTURING AND TRANSFERRING CRITICAL KNOWLEDGE

6. When deciding how to capture and transfer knowledge, consider the ratio of tacit to explicit knowledge, the intended audience, and the rate of change.
7. Structure systematic knowledge elicitation as a time-bound event with clear goals, milestones, responsibilities, and outcomes.
8. Provide multiple channels for informal knowledge capture, and make it easy.
9. Develop a process to capture and transfer knowledge related to specific roles.
MANAGING ACCESS TO CRITICAL KNOWLEDGE

10. Make knowledge broadly accessible unless there is a specific reason to restrict it.

11. Make access easy and part of employees' workflows.

12. Offer self-service tools to navigate, filter, and customize the flow of knowledge—and provide a human support team as a last resort.

13. Leverage communities to help socialize knowledge and connect people to the right content, information, and expertise.

MANAGING CHANGE RELATED TO KNOWLEDGE CAPTURE, TRANSFER, AND REUSE

14. Embed knowledge champions and change agents in the business.

15. Make knowledge capture, transfer, and reuse measureable aspects of employee performance.

16. Help employees understand the level at which they are participating and allow for friendly competition.

ENSURING CRITICAL KNOWLEDGE IS APPLIED AND USED

17. Build elicited knowledge into documentation, training, and learning resources.

18. Make stakeholders explicitly accountable for contributing and applying knowledge.

19. Use measures and success stories to demonstrate the value of knowledge reuse.

The Best-Practice Organizations

Below are brief overviews of the six best-practice organizations that participated in this study. More details on each organization and its respective KM program can be found in the full report and the case studies that follow it.

ACCENTURE

Accenture is a professional services organization focused on consulting, technology, and outsourcing services. It uses the term social learning to refer to its KM program. The mission of Accenture’s social learning program is to enable employees to learn from one another through collaboration and knowledge sharing in order to bring the best of Accenture to clients. The program has enterprise-wide reach through a central knowledge...
repository, a central search capability for knowledge content, and a central learning management system.

The social learning team aims to connect employees to the collective wisdom of the organization through content, communities, ideation, and experts and to accomplish this outside of the bounds of formal training. Although the processes do not specifically emphasize experiential knowledge, content pieces serve as entry points to experts who can provide context and lessons learned around that content.

KRAFT FOODS GROUP INC.

Kraft Foods Group Inc. is a North American grocery manufacturer supplying a range of beverages, cheeses, dairy products, snacks, and convenience food. Kraft’s R&D function, which is the focus of this research, handles knowledge capture and transfer through an integrated group focused on KM, intellectual property, and technical training.

The KM team at Kraft R&D provides access to knowledge and technical training, selects and manages approaches for knowledge capture and documentation, and supplies subject matter expertise for certain research-related business processes. As part of its mission, the team plays a central role in creating and publishing the organization’s knowledge books (topic-focused guides containing knowledge elicited from senior experts) and managing its R&D Suite repository for technical reports and related knowledge.

LLOYD’S REGISTER: MARINE

The Lloyd’s Register Group provides risk assessment and mitigation services across a variety of industries. Its marine business area, which is the focus of this research, is a leading provider of marine classification and certification services, helping to ensure that internationally recognized safety and environmental standards are maintained at every stage of a ship's life.

Lloyd’s Register: Marine developed its KM strategy to ensure that knowledge flows between geographically dispersed project teams and remains with the organization when technical experts leave. The organization is also in the process of relocating approximately 350 employees from London to a new Global Technology Centre in Southampton, United Kingdom. The Global Technology Centre is being created to ensure technical experts can collaborate with academia and the maritime cluster in order to stay up-to-date on the latest advances in technology. A major driver of Lloyd’s Register: Marine’s knowledge transfer strategy is to ensure critical knowledge is not lost during the relocation process from employees nearing retirement and/or who decide not to relocate.

LOCKHEED MARTIN

Lockheed Martin is a global security company primarily serving the defense, civil government, and intelligence markets. The organization has many tools and approaches
to facilitate the identification, capture, transfer, and reuse of critical knowledge, but it does not have a chief knowledge officer or a central KM program/structure. Instead, the organization supports an assortment of discrete KM initiatives based on the strategic needs of its business areas.

Lockheed Martin’s most impactful KM initiatives include:

- knowledge continuity, a formal process to identify critical knowledge, capture it, and transfer it to those who need it;
- communities of practice, virtual networks that facilitate knowledge sharing and provide access to expertise in specific knowledge domains;
- the LM Fellows Program, a program to acknowledge and leverage the organization’s top technical experts; and
- technical talent management, tools and approaches to identify critical skills by role and focus employee development on the acquisition of those skills.

U.S. DEPARTMENT OF STATE

Created in 1789, the U.S. Department of State is the federal department responsible for the international relations of the United States. In 2002, the State Department established the Office of eDiplomacy to capture knowledge and make it available across the agency and the larger interagency community. The initial goals of the KM strategy were to:

- tap into existing knowledge,
- leverage experience and expertise within the organization, and
- find new ways to connect and collaborate across organizational and regional boundaries.

The State Department wants to ensure that its personnel can find and share knowledge anywhere, anytime. The organization has implemented a number of programs and tools in support of this goal including enhancements to official communications, communities of practice, an enterprise-wide wiki, a professional networking platform, and a unified search capability.

WIPRO LTD.

Wipro Ltd. is a global IT, consulting, and outsourcing organization offering IT services, outsourced R&D, infrastructure services, business process services, and business consulting services across a variety of industries. The organization’s KM strategy involves delivering innovative solutions through collaboration and seamless knowledge exchange across departments, functions, and locations.
Wipro launched its KM program in 2000 when it saw that its global offices were developing solutions that could be used throughout the enterprise. At first, the focus was on creating content, putting it in the hands of project teams in different locations, and making sure the teams knew how to use that content. Over time, the organization began to emphasize collaboration and introduced blogs, wikis, communities of practice, and networks to bring employees together to share knowledge and ideas. More recently, the focus has evolved to ensuring there is value in the knowledge being created and measuring KM’s impact on the business and its customers.
Chapter 1: Creating a Strategy and Process to Protect Critical Knowledge

Best Practices

1. Create a comprehensive knowledge capture and transfer strategy focused on business continuity.

2. Let business leaders drive the strategy and process, with KM functioning as an enabler.

3. Design the strategy and process with an understanding of the organizational culture and "appetite" in mind.

In the course of APQC’s research on best practices in KM, we have observed that the knowledge inside organizations moves through a continuous cycle from creation to use. We have also learned that knowledge is sticky and won’t move without help. Based on more than 15 years of research, APQC created its Knowledge Flow Process (Figure 1), a seven-step cycle describing how knowledge is created, identified, collected, reviewed, shared, accessed, and used within organizations. Every step in the cycle is important, but business value is not realized until the cycle completes and knowledge is applied and used in new contexts.

APQC’s Knowledge Flow Process

Figure 1
Knowledge that flows has the potential to enhance employees’ skills and capabilities and add broader value to the business as a whole. However, in most organizations, knowledge flows are hidden, embedded in methodologies and workflows. Because of this, many organizations don’t realize they have a knowledge flow problem until it is too late and something has gone wrong.

As stated by APQC’s Carla O’Dell and Cindy Hubert in their 2011 book *The New Edge in Knowledge: How Knowledge Management Is Changing the Way We Do Business*, “The purpose of a KM strategy is to enable the knowledge flow process.” Understanding how knowledge moves through the organization helps the KM group isolate exactly where the process breaks down and reveal the root cause of knowledge gaps. The group can then design a strategy to address those disruptions in the process and fill the knowledge gaps created by the breakdowns.

Any KM team focused on knowledge capture and transfer needs to ask itself: Do we have a strategy to address our organization’s knowledge capture, transfer, access, and reuse needs? Or do we have random acts of knowledge capture and transfer? A strategy should identify who the key stakeholders are (including leaders and end-users), where the funding will come from, a timeline for completion or milestones to show progress, what techniques will be used, other resources (e.g., people and technology) that will be required, and who is responsible and accountable for results.

Each of the best-practice organizations involved in this study possesses a knowledge capture and transfer strategy that balances people, processes, and technology. As the next few sections of the chapter show, their respective strategies focus on business goals, rely on strong partnerships with internal business partners, and reflect the appetite of the organization for KM.

**Create a Comprehensive Knowledge Capture and Transfer Strategy Focused on Business Continuity**

In this study, all the best-practice organizations examined have strategies and processes for knowledge capture, transfer, and reuse, compared to 31 percent of the sponsor organizations. Another 46 percent of sponsors indicated that such strategies and processes are under development, whereas the remaining 23 percent indicated that their organizations have no such strategies and processes at this time. Additionally, the strategies at the best-practice organizations are more mature, having been in place at least three years (and some longer than a decade). By comparison, at least half the sponsors’ strategies have been in place for less than three years.

An organization without any strategy for knowledge capture, transfer, and reuse is at a severe disadvantage, but simply having a strategy is not enough. A critical success factor for any knowledge capture and transfer strategy is the value proposition. To articulate the value proposition, the KM team must ask itself: Why do we need to capture and transfer critical knowledge? What will happen if we don’t? Although half the best-practice
organizations have aging work forces, the underlying driver of their knowledge capture/transfer programs is business continuity, whether that means dealing with a retirement crisis, relocation, or merger/spinoff or simply enhancing the consistency of delivery across business units and regions (Figure 2). Even in cases where a best-practice organization began with a narrow focus, it ultimately expanded its strategy to address more than the initial problem or challenge.

**Drivers of the Knowledge Capture and Transfer Strategy**

![Bar chart showing various drivers of knowledge capture and transfer strategies.](chart)

- **Business unit/geographic knowledge siloes**: 69%
- **Training and development requirements**: 38%
- **Non-retirement-related employee attrition or retention challenges**: 60%
- **Internal reorganization/movement of employees to new roles**: 46%
- **Merger, acquisition, spinoff, or similar transition**: 31%
- **Downsizing or redistribution of the work force**: 23%
- **Growth or expansion into new markets**: 31%
- **Impending retirement of senior experts/key staff**: 40%
- **Difficulty of hiring people with specific skills/knowledge**: 54%

**Figure 2**

Clearly, the implementation of effective knowledge capture and transfer strategies is a vital enabler of the success that the study’s best-practice organizations have enjoyed to date. With strategies in hand, these organizations are able to pinpoint where to focus their
efforts (e.g., R&D, sales, and engineering); identify key stakeholders to involve (e.g., process owners, project managers, and end-users); and ascertain the other resources needed (e.g., funding and technology) to execute the strategy and meet the stated goals.

In at least three programs—Lloyd’s Register: Marine, Kraft Foods, and the U.S. Department of State—the APQC project team observed explicit links to the business strategy itself, including the enterprise mission and goals. These three organizations can clearly define the value path from knowledge capture and transfer activities to business strategies and outcomes. This link between KM and the business strategy is how the programs get support from business leaders, and it also determines how they allocate resources and funding.

Business continuity is key to KM at Lloyd's Register: Marine, where knowledge retention and transfer and business continuity planning are part of one process. A relocation of 350 employees from London to Southampton was a main business driver for developing the organization’s business continuity plan, a document used to identify critical business functions and document the actions managers need to complete to ensure continuity of operations. The plan identifies which functions in the organization are at risk of losing knowledge along with any notable individuals with critical knowledge in those functions. Although the business continuity plan was especially crucial in the context of the relocation, it existed before the organization planned to relocate and will continue to be used as part of ongoing processes for strategic planning and KM.

Prior to developing the business continuity plan, the KM team at Lloyd's Register spent a lot of time with key stakeholders developing what the KM vision would look like and what it should achieve. Using a benefits mapping process (Figure 3), they identified seven business benefits that would accrue from enhanced knowledge retention and transfer:

1. **people and content available from one source**—providing a central portal for all technical and business organizations;
2. **technical knowledge retained**—reducing the risk of losing technical knowledge while regenerating existing knowledge;
3. **starters get up to speed more quickly**—providing new hires access to key information;
4. **risk of inconsistencies reduced**—delivering better, more standardized information to employees regardless of location;
5. **technical capability improved**—providing best practices and connecting people with the right experts;
6. **efficiency increased**—helping employees access technical knowledge quickly as part of their normal workflows; and
7. **service to clients improved**—delivering the best possible information and expertise to clients.
The team then outlined how the benefits support the broader business strategy, articulating clear ties from knowledge retention and transfer activities to overarching strategic goals.

**Benefits Mapping Process at Lloyd’s Register**

![Benefits Mapping Process Diagram](image)

**Figure 3**

Business continuity issues are equally central to knowledge capture and transfer efforts at Kraft Foods. In 2012, Kraft Foods Group Inc. split from Kraft Foods Inc., which became a new company called Mondelēz International. The new Kraft Foods and Mondelēz have a number of business lines in common including cheese and dairy, coffee, and powdered beverages. In these areas, it was critical to ensure that each newly formed company had the knowledge it needed to maintain operations and be competitive. Any information or expertise that was historically shared between the two entities needed to be reproduced and made available in both. In 2013, when the spinoff was complete, the new Kraft Foods decided that it wanted to proactively identify and capture at-risk knowledge so that it would be prepared for the pending retirement of senior experts as well as any future restructuring or business changes that might occur.

Lockheed Martin’s knowledge capture and transfer strategy focuses on ensuring the preservation of skills and expertise needed to maintain programs and execute work for clients. The organization works on many long-term, mission-critical U.S. government and defense programs, and its clients need evidence that program teams can pass down relevant knowledge and maintain their expertise over time in order to ensure program continuity. Furthermore, Lockheed Martin sometimes competes for contracts currently held by competitors, and a key part of winning this business is showing that the project team can glean relevant knowledge from the current contract holder and transition the project with minimal disruption.

For the U.S. Department of State, business continuity means providing diplomats and other employees with the information needed to support and implement U.S. foreign policy. Many of the positions within the State Department operate on two- or three-year rotations, so knowledge capture and transfer is critical to ensure continuity of operations.
As a professional services firm, Accenture considers knowledge and expertise key to its business model and therefore to business continuity. Accenture uses the term social learning to refer to its knowledge-sharing program. It chose this term to focus more on the initiative’s outcomes, rather than on the management of knowledge itself. The mission of Accenture’s social learning program is to enable employees to learn from one another in order to bring the best of Accenture to its clients. The social learning team aims to connect people to the collective wisdom of the organization through documents, communities, ideation, and experts and to accomplish this outside the bounds of formal training.

Like Accenture, Wipro’s business relies on knowledge, but it is also marked by aggressive expansion and rapid turnover. For it, capturing best practices and reusable intellectual property is critical to ensure that new employees have access to the best information, intellectual property, and expertise. Business continuity at Wipro means enabling seamless knowledge exchange across departments, functions, and locations so that employees are able to speak competently about all of the organization’s domains, technologies, and business parameters. Wipro sees a direct correlation between the level of knowledge available to the workforce and customer satisfaction, which is one of its most important strategic business objectives.

For the best-practice partners, part of the success of their strategies depends on how well the KM champions and teams collaborate with their internal business partners to understand knowledge needs throughout the organization. The next section of this chapter describes what these partnerships look like at the six organizations. (For more details on each of these best-practice organizations, please see the case studies accompanying this report.)

Let Business Leaders Drive the Strategy and Process, with KM Functioning as an Enabler

Each best-practice KM program featured in this study has a strong relationship with the business groups and end-users who perform work and create new knowledge within their organizations. Among these KM programs, the pervasive belief is that KM doesn’t own the content or knowledge, but rather provides the toolkit for knowledge capture and transfer and offers advice and support to the business groups. Bruce Burton, senior advisor at the U.S. Department of State, described it best when he said, “We’re knowledge stewards, not knowledge guardians.”

Responsibility for the design and execution of the knowledge capture and transfer strategy, processes, and approaches is shared among many stakeholders at the best-practice organizations. The KM groups partner with senior leaders, HR, and other stakeholders to design the strategy, processes, and approaches (Figure 4). Involving senior leaders in the design helps ensure that the strategy supports business goals and needs, whereas involving HR guarantees that the right groups of people are involved in
knowledge capture and transfer, including those with critical skills and experience that should be documented and those from areas that lack sufficient bench strength.

Groups or Functions Responsible for Strategy Design

However, when it comes to executing the knowledge capture and transfer strategy and process, the KM group shares responsibility with operational/business units, communities of practice, and subject matter experts (Figure 5). With regard to execution, the KM team is accountable for the effectiveness of the processes and approaches and supports the other stakeholders by consulting with them on the best techniques, providing training, and so forth. For their part, the business units, communities, and subject matter experts are in charge of identifying critical knowledge, capturing it, reviewing it, and sharing it so that others can apply and use it.
Accenture’s KM team uses a social learning governance model to define roles and responsibilities for its social learning strategy. The first role is business leadership, which is responsible for sponsoring social learning, prioritizing the objectives of the program, and ensuring that the initiative is heading in the right direction. The second role is business champions; these are subject matter experts, collaboration champions, and project team champions who are responsible for taking capabilities and applying them to solve business problems. The third role is capability development groups, which work with business leaders to ensure that the social learning strategy meets the skill and knowledge needs of the business. The final role is social learning experts (e.g., strategy leads, social learning catalysts, and administrators), who interact with Accenture’s business groups to provide tools and implement content and collaboration solutions. Recently the business groups have taken more responsibility for communities of practice,
which in turn are responsible for content quality and maintaining a collaborative culture. In addition, individual content owners are responsible for the content they publish, including updating or archiving it when it becomes out of date.

At Kraft Foods, the R&D groups within the business units make the ultimate decisions about what content to capture and how to capture it. The KM team offers the businesses a range of knowledge capture and transfer options along with guidance on those methods. Researchers are expected to share key resources such as technical reports in a central repository, but the KM team is not overly prescriptive since each business unit has its own ways of dealing with knowledge. When the KM team communicated with R&D leaders about capturing and transferring knowledge prior to the spinoff, the KM program director told them, “You’re not doing this for me, you’re doing it for you.” This helped cement the message that the purpose of knowledge capture and transfer is to support the business and business leaders must help drive execution.

Although Lockheed Martin’s corporate function supports a range of KM tools and approaches, it does not promote a comprehensive, enterprise-wide KM strategy. Instead, it relies on senior leaders and KM champions in the organization’s business areas to support a series of discrete KM initiatives. The business areas decide what knowledge is critical and how they prefer to capture and transfer it, while the corporate KM function provides tools and high-level support. Everything that Lockheed Martin does to identify, capture, transfer, and apply knowledge is ultimately tied to the success of its programs and business areas. One indication of this is that most KM tools/initiatives are either funded directly by the business areas or by the Corporate Engineering and Technology group, a function tasked with enabling continuous improvement and change management for engineering projects and programs across the business areas.

Lloyd’s Register: Marine’s knowledge capture and transfer efforts are driven by the business as laid out in its business continuity plan. As part of a risk assessment process (described in detail in Chapter 2), the KM team works with relevant business and technical managers to identify critical knowledge domains for capture and transfer. The business and technical managers also identify people with capabilities in these knowledge domains who should be interviewed as part of the process.

The U.S. Department of State’s Office of eDiplomacy's mission—“advancing diplomacy by providing effective knowledge-sharing initiatives, guidance on convergence of technology and diplomacy, and first-class IT consultancy”—conveys its role enabling and empowering the agency’s embassies, missions, and consulates. In other words, eDiplomacy provides tools, guidance, and consulting to help the organization operate more effectively. It is the agency’s staff members (including Foreign Service officers, civil servants, and contract specialists) who decide what knowledge or content is critical and should be captured and shared. One indication of the tight integration with "the business" is that some of the many KM activities and programs are included in existing budgets under embassies or consulates, rather than being funded separately.
At Wipro, there is a similarly close relationship between the KM program responsible for knowledge capture/transfer and the business groups performing work on behalf of clients. This is demonstrated by the goals of the KM program, which align directly with the organization’s overall business objectives. For example, one of the criteria used to evaluate the success of Wipro’s KM initiatives is whether they positively affect business metrics such as the amount of new business generated, the rate of productivity, and cost avoidance. Another gauge for assessing the KM program is customer satisfaction; Wipro wants its customers to experience the power of the organization’s collective knowledge and feel the difference once the engagement is over. With such business-focused measures, it is clear that the business groups drive the KM strategy and that KM exists to support business performance.

Another thing these six KM programs have in common is that they offer a range of products and services to their business partners. They recognize that knowledge capture, transfer, and reuse do not lend themselves to a “one size fits all” solution and adjust accordingly. The next section of the chapter describes what this means for the best-practice organizations.

**Design the Strategy and Process with an Understanding of the Organizational Culture and “Appetite” in Mind**

One thing that came through loud and clear during the study is that each best-practice organization has a clear understanding of its culture—including the needs, preferences, and attitudes of its work force—and has built its program around those nuances. Although the businesses drive the substance of the strategy in terms of what knowledge to capture and what outcomes are important, the KM group contributes its understanding of the available tools and approaches, the culture(s) of the organization, and how to tailor the approaches to fit the culture and business context.

Accenture’s social learning program is tightly linked to its efforts to build and maintain a collaborative culture. Employees are generally collaborative, but this may be impeded by the perception that they are too busy to contribute and share. For this reason, the organization has focused on making participation easy and engaging employees through a strong change strategy that includes marketing, communications, training, rewards, and gamification tools. (For more information on Accenture’s change management activities, see Chapter 5.)

Kraft Foods has actively positioned its KM strategy and process to fit within its R&D culture. For example, the organization creates its knowledge books (the end product of its knowledge capture and transfer process) in Microsoft PowerPoint because the format is familiar, user-friendly, and versatile. In another example, when the KM team realized that R&D staff were overwhelmed by too many overlapping messages, it worked to create the Innovator’s Framework, a toolkit that boils down KM, open innovation, and intellectual
property best practices into a streamlined set of actions and questions for employees and provides links to relevant tools and resources.

The tight integration of Lloyd’s Register Marine’s KM strategy with business continuity and needs has helped with cultural acceptance. However, the organization has also taken steps to mold its KM tools and approaches to its culture, including the creation of the knowledge retention and transfer (KRT) specialist role and the KRTLite process. KRT specialists act as extensions of the KM team embedded in Lloyd’s global offices. These individuals spend two to three hours per week on KM work, helping to ensure that knowledge is captured when someone retires or leaves and integrating knowledge capture and transfer activities into the workflow of their offices. KRTLite is a streamlined version of the organization’s standard knowledge capture and transfer process, which can take more than a year to complete. The shorter version is adapted for situations where a person has only a few months before he/she retires, transitions, or leaves the organization.

The U.S. Department of State’s KM strategy is also designed to align with its organizational culture. For example, a key aspect of the State Department’s culture is that employees tend to like writing things down, which caused the Office of eDiplomacy to focus its efforts on getting employees to document their knowledge and expertise in places where they can be accessed by others. Another cultural thread is that some employees are not particularly tech savvy; the Office of eDiplomacy team has addressed this by reducing barriers to entry and implementing simple collaboration and knowledge-sharing tools that mimic Facebook and other applications that employees use in their personal lives. Finally, prior to 2002, the State Department’s information management practices adhered to the Cold War policy to share knowledge on a “need to know” basis, which restricted information to the fewest people possible. To address this, eDiplomacy has worked to communicate that State employees are the stewards of knowledge, not the owners of it, and it is therefore important to make relevant knowledge available to as broad an audience as possible (within the constraints required by classification and other legal restrictions).

Lockheed Martin’s decentralized approach to knowledge capture and transfer, coupled with the range of available tools and approaches, enables programs and business areas to choose the knowledge-sharing channels that best align with their needs, cultures, and short- and long-term goals. For example, one business area has a collaborative environment in which consensus-building is valued, whereas a second is more fast-paced and innovative. At a third, a significant portion of the work force is involved in hands-on engineering and rarely sits down at a computer terminal. According to Knowledge Strategist Patrice Jackson, the only way to accommodate these differences is to be flexible and provide a portfolio of options from which the business areas can pick and choose.

Wipro handles the diverse cultures that exist across the organization by dividing the work force into segments and developing customized approaches and messages for each. (Example segments include consulting, senior management, and business process outsourcing.) The KM team has created a separate portal for each segment with tailored
content, KM approaches, and access to repositories that the segment may need. For example, project teams need processes and domain-specific knowledge/trends, whereas the business process outsourcing team is primarily interested in customer solutions and related content from Wipro’s knowledge base. Wipro also treats Millennials as their own segment and targets specific content, applications, and approaches to that audience.

**Additional Observations**

APQC also noted that the majority of the best-practice organizations participating in this study experienced a defining moment, or inflection point, that caused them to launch or intensify their strategies for knowledge retention and transfer. The exceptions were the two professional services firms, where selling and capitalizing on knowledge is part of their business models.

Although Kraft Food’s KM strategy predates the spinoff of Mondelēz International, knowledge capture and transfer activities were naturally accelerated by the separation. Because the R&D functions of some businesses were being relocated, the organization knew it risked losing long-tenured employees who did not want to move. The restructuring would also lead to internal movements and attrition, with positions disappearing and changing enterprise-wide. Furthermore, employees from the two resulting organizations would not be allowed to collaborate except in very narrow, predefined cases, so it was critical to ensure that knowledge was captured and duplicated before the completion of the spinoff.

Lloyd’s Register: Marine is also experiencing a transition as it relocates 350 employees from London to its new Global Technology Centre in Southampton, United Kingdom. The organization is building the Global Technology Centre as a place where its technical experts can collaborate with academics in order to stay up-to-date on the latest advances and better serve clients. Although Lloyd’s Register has had a knowledge transfer strategy in place since 2003, it has enhanced and re-emphasized that strategy to ensure that it preserves and passes on critical knowledge from retiring employees and others who decide not to relocate.

Starting in 1998, a series of events drove the need for change with regard to the U.S. Department of State’s culture and philosophy on knowledge sharing. The first event was the East Africa embassy bombings. A blue ribbon commission chartered to examine the U.S. overseas diplomatic presence found that the State Department was not very good at sharing internally or with other agencies and therefore recommended the implementation of a KM program. The second event was the terrorist attacks on September 11, 2001. These attacks and the war on terrorism provided a strong impetus for change and highlighted the need to share information more broadly both within and across government agencies. The leadership of then-Secretary of State Powell and other high-level officials helped transform the department’s attitude toward information sharing.
Strategic support for knowledge transfer at Lockheed Martin’s corporate level took shape in 2005–2006 as part of a horizontal integration initiative focused on increasing the corporation’s logistics business. The CEO announced a goal to double the logistics business in three years, and the leader in charge of the effort thought that communities of practice could help facilitate this growth. The leader hired Patrice Jackson, a KM expert, to create a framework and teach people in the business areas how to launch and sustain effective communities.

Although it is not necessary for an organization to experience a significant business disruption or crisis in order to formulate an effective knowledge strategy, such events can establish or reinforce the business case for knowledge capture, transfer, and reuse. When KM efforts focus on an immediate and compelling business need—such as capturing knowledge from employees who will not move to a new location or duplicating knowledge in preparation for a spinoff—it can be easier to draw the attention of senior leaders and get them involved in designing and executing the strategy. However, once the strategy is in place, the ongoing business impact may keep business leaders engaged and supportive long after the immediate crisis has passed. This is certainly the case at some of the best-practice organizations, which used these moments as jumping-off points to establish more long-range and comprehensive knowledge capture, transfer, and reuse programs.

Closing Comments

It is obvious that each of the six best-practice organizations has a comprehensive knowledge capture and transfer strategy that supports business objectives. However, the best strategy in the world is useless unless the right knowledge is identified for capture and transfer. The next chapter of this report explores exactly how the best-practice organizations determine what knowledge is critical to be documented, shared, and reused.
Chapter 2: Identifying Critical Knowledge

Best Practices

1. Let business leaders and experts determine what knowledge is critical, but provide criteria to support their decision making.

2. Leverage a combination of top-down and grassroots approaches to identify critical knowledge.

3. Create a comprehensive knowledge capture and transfer strategy focused on business continuity.

When developing a strategy and process to preserve critical knowledge, one of the most crucial considerations is determining what knowledge should enter the pipeline. Although it would be great to document and share every piece of knowledge floating around an organization, a fully comprehensive approach simply isn’t feasible. KM teams have limited resources to allocate to knowledge capture and transfer, and employees—especially the experts with the most to contribute—have limited time in which to participate. Tough decisions must be made, and to ensure an organization maximizes its investment, it needs to focus on the knowledge most in need of preservation.

Figure 6 lists criteria the best-practice and sponsor organizations consider when deciding what knowledge to capture and transfer. The biggest difference between the partners and sponsors relates to alignment with business strategy, which 100 percent of partners and only 38 percent of sponsors use as a factor to assess critical knowledge. APQC believes that this difference may stem from the close ties between the KM teams and business groups at the best-practice organizations, which Chapter 1 details. Because the partners involve business leaders in the design of their knowledge capture and transfer strategies, they are in a better position to assess critical knowledge through the lens of the business strategy and favor knowledge that supports strategic priorities.

The best-practice organizations are also more likely than the sponsors to use the other selection criteria listed in Figure 6, including:

- the immediacy of potential knowledge loss,
- the risk or cost of potential knowledge loss,
- the difficulty of replacing the knowledge once lost, and
- the applicability of the knowledge to other parts of the business.
In fact, 38 percent of sponsors report having no criteria at all to identify or prioritize critical knowledge, which would naturally lead to haphazard, ad hoc approaches at those organizations.

Criteria to Determine What Knowledge Should Be Captured/Transferred

The remainder of this chapter explores the best-practice organizations’ processes to identify critical knowledge. Although there is significant variety in how the partners approach this issue, they all have deliberate strategies suited to their business models, organizational cultures, and the types of knowledge they need to capture and transfer. More specifically, they all engage business leaders and knowledge holders in some manner to help decide what knowledge should enter the capture and transfer process. They also use a combination of top-down approaches and grassroots initiatives to piece together the full picture of what constitutes critical knowledge for their organizations.
Let Business Leaders and Experts Determine What Knowledge Is Critical, But Provide Criteria to Support Their Decision Making

A common theme observed across the best-practice organizations is that they enlist leaders and other knowledgeable people performing the work of the business as the ultimate arbiters of what knowledge to capture and transfer. This is demonstrated by the data in Figure 7, which lists the approaches used by the partners and sponsors to identify critical knowledge within their organizations. All of the partners involve business-unit and functional managers in the identification process, compared to about two-thirds of sponsors. A majority of partners also involve project/process managers and subject matter experts, consequently combining these inputs with information from KM and HR on content gaps and/or work force planning needs.

It is especially important to leverage business leaders to identify critical knowledge because they have insight into the strategic outlook of their departments and functions, including which knowledge domains are critical to support short- and long-term goals and which areas have the most urgent needs due to retirement, attrition, internal churn, or other factors. Project managers, process owners, and subject matter experts can provide additional feedback on what knowledge is growing in importance, what is becoming obsolete, and what specialized fields are at risk because they are understood by only a few experts.

The reliance on business leaders and experts to decide what knowledge enters the pipeline for capture and transfer does not mean that the KM team has no role to play, however. In most cases, knowledge managers must provide a framework or rubric to guide the decision making and then prioritize the leaders’ and experts’ recommendations by order of urgency and/or importance. Some organizations focus on interview questions and ratings to help determine the most critical knowledge areas, whereas others rely on user data and feedback to guide investment decisions.

Of the best-practice organizations, Kraft Foods R&D has one of the most clearly defined processes to identify and prioritize critical knowledge. It begins when the KM team asks business-unit vice presidents to recommend fields that would be appropriate targets for knowledge retention and transfer. The vice presidents make suggestions based on a comprehensive understanding of their areas, including which senior experts are nearing retirement, where pockets of unique knowledge reside, and any critical technologies that have not been formally documented. Kraft's KM team then assesses the recommended knowledge fields by interviewing experts and managers in the respective areas. Each interviewee is asked to score his or her field of knowledge against 11 questions focused on the rarity of the knowledge, its strategic breadth, the difficulty of acquiring the knowledge, and the difficulty of applying the knowledge once acquired.
Approaches Used to Identify Critical Knowledge

- Business unit/functional managers identify critical knowledge: 62% (N=5) vs. 62% (N=13)
- Identified based on interviews with experts and other key employees: 54% (N=5) vs. 54% (N=13)
- Project/process managers identify critical knowledge: 31% (N=5) vs. 80% (N=13)
- Identified based on current gaps in documented content/knowledge: 46% (N=5) vs. 80% (N=13)
- Key knowledge domains are identified based on workforce planning and skill gap analysis: 46% (N=5) vs. 80% (N=13)
- Employees self-identify critical knowledge: 31% (N=5) vs. 60% (N=13)
- Communities of practice identify critical knowledge: 60% (N=5) vs. 69% (N=13)
- Identified based on employees' retirement date, job role, tenure, and expert status: 60% (N=5) vs. 54% (N=13)
- Identified based on alignment to business strategy and objectives: 60% (N=5) vs. 54% (N=13)
- Identified based on social network analysis: 15% (N=5) vs. 40% (N=13)
- Identified based on performance statistics: 8% (N=5) vs. 20% (N=13)

Figure 7
The questions focus on issues such as:

- How many people inside and outside Kraft possess the relevant knowledge?
- Is Kraft an industry leader in the field?
- Can the knowledge be applied across different products/areas of the business?
- What depth of expertise is required to successfully apply the knowledge?
- Do experts need related knowledge, such as an understanding of competitor supply lines or government regulations, to apply the knowledge?

Based on scores and commentary from the experts and managers, Kraft’s KM team creates charts and graphs to compare the topics and their relative priority (Figure 8). It then compiles a list of final recommendations, which are communicated back to the business leaders to secure their buy-in.

**Kraft Foods: Scoring and Prioritizing Knowledge Fields**

![Figure 8](image)

Lloyd’s Register: Marine identifies its critical knowledge through a similar partnership between its KM team and business leaders. The organization uses a business continuity plan to outline critical business functions at risk of losing knowledge, individuals with critical knowledge in those functions, and the actions managers must take to ensure the
continuity of operations. The prescribed actions may include resourcing, recruitment, or knowledge retention and transfer activities. Individual managers are responsible for filling out their sections of the business continuity plan, which means they have ultimate control over the knowledge domains and experts from which knowledge is captured and transferred.

However, in tandem with the business continuity plan, Lloyd’s Register’s KM team conducts knowledge risk assessments to surface knowledge gaps within the organization’s departments, technical functions, and locations. The four-stage process includes:

1. **scope**—the KM team works with business managers to identify technical areas on which to focus and experts from whom knowledge should be elicited;
2. **assessment**—experts are interviewed about business strategy, workload, market availability, global and local availability/applicability of knowledge, and steps they need to take to record their knowledge prior to retirement;
3. **analysis**—the data from the questionnaires is analyzed to identify themes; and
4. **recommendations**—the KM team identifies knowledge transfer and training opportunities.

The risk assessment process at Lloyd’s Register is helpful when there is a risk of losing people with critical expertise, but it is also applied more broadly to ensure that each department, technical function, and office has the knowledge it needs to support ongoing operations. The process is effective in part because it combines insights from managers and experts with an understanding of long-term needs from KM and HR.

At Lockheed Martin, an enterprise-wide Corporate Engineering and Technology group manages its knowledge continuity process, which is designed to transfer at-risk, critical knowledge associated with programs and functions. However, the organization’s five business areas have complete autonomy to decide which topic areas are selected for knowledge continuity. According to representatives from the Corporate Engineering and Technology group, the purpose of formal knowledge transfer is to support the business areas in achieving their goals, and they are best qualified to determine what knowledge is important to their operations. On request, Corporate Engineering and Technology may help a business area determine whether knowledge continuity is appropriate for a particular situation, but the team always serves in a consulting—rather than a prescribing—role. This puts Lockheed Martin’s business areas and programs in the driver’s seat in terms of identifying critical knowledge in need of transfer.

The other three best-practice partners have less systematic processes to ascertain what knowledge should be captured and transferred. In some cases, identification of critical knowledge is organic, with individual employees and project teams contributing knowledge they believe would be valuable to others. However, like their more formal counterparts, these processes rely on people out in the business to determine what knowledge should be preserved, with KM providing guidance and support. And leaders
and managers still play an important role, both by helping to decide where and how knowledge should be captured and by encouraging their staffs to participate.

For example, any employee can contribute content to Accenture’s knowledge exchange system, but business leaders identify key client engagements and knowledge gaps on which strategic content harvesting efforts should focus. In fact, one of the Accenture’s six strategies for content harvesting is to gain sponsorship, which ensures that business groups are involved in the knowledge identification process. Employees are asked to self-identify valuable knowledge to share, but these requests are often guided by loose parameters set by the leadership.

This is also true at Wipro, which uses managers to identify strategic accounts on which to focus and help design contests and campaigns to fill knowledge gaps. Senior manager also have to approve the KM plans for specific account and project teams, which ensures the knowledge being captured and transferred aligns with the strategic needs of the business.

More information on Accenture and Wipro’s strategies is provided in the next section, which describes how the best-practice organizations combine top-down and grassroots approaches to identify critical knowledge.

Leverage Top-Down and Grassroots Approaches to Identify Critical Knowledge

Regardless of how formal or informal a particular best-practice organization’s identification approach may be, all include some balance of top-down and grassroots tactics. For example, the strategies at Kraft, Lloyd’s Register, and Lockheed Martin described in the previous section are all relatively top-down, with definitions of critical knowledge originating with executives and managers. However, these organizations also employ grassroots methods of identifying critical knowledge to complement their top-down approaches.

For example, in addition to its formal knowledge continuity process for which business-area managers select the target knowledge domains, Lockheed Martin encourages employees to self-identify critical knowledge that should be shared across projects and programs. Employees can then communicate this knowledge through discipline-based communities of practice, which host blogs, wikis, and virtual meetings for knowledge sharing. Similarly, Kraft solicits critical knowledge from its R&D staff by asking them to submit technical reports on their projects, experiments, and innovations. Kraft also supports a variety of social networking tools to help R&D staff collaborate and share knowledge. Lloyd’s Register also uses communities, blogs, and wikis for more informal sharing of critical knowledge. The knowledge defined and shared through these mechanisms may not receive as much focus or attention as the knowledge identified through strategic prioritization, but the organizations still recognize the importance of getting employees to pick out and document critical knowledge that should be preserved.
The other best-practice organizations also combine some type of top-down identification process with more bottom-up approaches in which individual employees, teams, or communities determine what is critical to capture.

Accenture has perhaps the most balance between top-down and grassroots approaches to identify critical knowledge by involving both business leaders and individual contributors in the decisions. As mentioned in the previous section, leaders and managers are responsible for helping the social learning team surface knowledge and content gaps. They are also instrumental to the organization’s engagement harvesting approach, which involves singling out the top client engagements from which content should be harvested each month.

However, other approaches at Accenture involve reaching out to end-users to identify critical knowledge. For example, members of the social learning team go into conversations on community sites to learn about the content employees desire, which allows the team to focus harvesting on the most in-demand topics or formats. In addition, content managers look at content snapshots—which provide data on the amount, use, and quality of content for the respective areas—to find areas where there is high demand and little fresh, high-value content. The organization also encourages employees to self-identify knowledge that might be useful to others and contribute that content to its knowledge exchange system.

Wipro’s most top-down approach to identify critical knowledge is tied to its internal KM maturity model. As part of a standardization initiative, the organization selected 150 strategic accounts and then used the maturity model to establish standard practices for identifying, capturing, and sharing knowledge within and across those accounts. By singling out strategic accounts, Wipro was able to focus knowledge harvesting and sharing on areas of the business that contain particularly valuable resources.

Wipro also has many grassroots approaches to surface critical knowledge. The organization encourages employees to share as broadly as possible, and it uses a variety of campaigns and contests to motivate them to self-identify useful knowledge. It also has processes in place to capture best practices and lessons from everyone within the workforce, from subject matter experts to new hires. In some cases, the KM team sifts through the information it collects to isolate the most valuable items, which it marks as premium content in the organization’s knowledge repository. This represents a more reactive strategy to identifying critical knowledge, in which the organization collects as much material as possible and then pinpoints the most critical items from within that stack.

Among the best-practice partners, the U.S. Department of State has the most grassroots approach to identify critical knowledge. The knowledge leadership team has a simple philosophy with regard to identifying critical knowledge: It doesn’t have the authority or expertise to do it. The State Department’s activities encompass a vast array of topical areas, and the nature of diplomacy means that a piece of knowledge might suddenly become critical years or decades after it initially surfaced. Rather than trying to define what is
critical, the team lets diplomats, embassy staff, and civil servants determine what is important and how best to capture and share it.

However, the State Department's knowledge leadership team does look at user feedback to help identify and fill content gaps. For example, if the organization’s search support team receives a request for content that is not currently available through federated search, then the team may seek out people to provide appropriate content and/or create a short wiki article to ensure appropriate content is available through the search engine.

Closing Comments

This chapter focuses on different strategies to identify and surface critical knowledge. As the examples demonstrate, it is sometimes difficult to unravel the processes used to pinpoint critical knowledge from those used to preserve it. The next chapter provides additional insight into the best-practice organizations’ knowledge capture and transfer processes, including how the partners shaped their approaches and the best practices associated with each.
Chapter 3: Capturing and Transferring Critical Knowledge

Best Practices

1. When deciding how to capture and transfer knowledge, consider the ratio of tacit to explicit knowledge, the intended audience, and the rate of change.

2. Structure systematic knowledge elicitation as a time-bound event with clear goals, milestones, responsibilities, and outcomes.

3. Provide multiple channels for informal knowledge capture, and make it easy.

4. Develop a process to capture and transfer knowledge related to specific roles.

Once an organization identifies its critical knowledge and knows where to focus its resources, the next step is to document the designated knowledge and share it with others who might need it. Knowledge capture and transfer can be as simple as dropping a pre-existing document into a content repository, but it can also be a time-intensive affair involving interviews with subject matter experts, translation of tacit knowledge into explicit formats, one-on-one mentoring, and on-the-job learning by knowledge recipients. The complexity of the process and the degree of planning required depend on the type of knowledge being transferred and the difficulty of passing it from one person to another.

The first section of this chapter explores the decision-making process involved in selecting a knowledge capture/transfer approach and the key questions organizations should ask themselves to determine the tool or technique best-suited to a given situation. The remaining three sections go into greater detail on the best-practice organizations’ approaches and what makes them successful, including the need for a formal project plan, options to encourage informal knowledge transfer, and the benefits of capturing and transferring knowledge related to specific job roles.
Consider the Ratio of Tacit to Explicit Knowledge, the Intended Audience, and the Rate of Change

In observing the six best-practice organizations in this study, APQC noticed a wide range in the processes used to capture and transfer critical knowledge. About half the partners favor more systematic methods, whereas the rest opt for more organic approaches.

In the systematic methods, the KM teams collaborate with business leaders, managers, and subject matter experts to articulate what knowledge should enter the pipeline, exactly how it should be documented and transferred, and who should learn from and use the outputs of the process. The more organic processes focus less on the sources and recipients of knowledge and more on the tools and approaches through which it flows. These processes still guide the capture and transfer of critical knowledge, but it is often up to individual business units, functions, project teams, and employees to decide what content and knowledge is worth sharing and make it available to others. In these scenarios, KM provides the toolkit and enablers, but does not dictate the end-to-end process to the same degree.

In looking at the best-practice organizations’ processes, APQC isolated three questions (Figure 9) that influence the level of central planning applied to the capture and transfer of critical knowledge:

1. How easily can the knowledge be put into documents or other explicit formats?
2. To what extent does the organization know who will need the knowledge in the future?
3. How quickly is the knowledge evolving or changing?

RATIO OF TACIT TO EXPLICIT KNOWLEDGE

When designing a knowledge capture/transfer approach, one of the first considerations is the ratio of tacit to explicit knowledge and the ease with which the tacit knowledge can be made explicit. Knowledge that can be codified in white papers, case studies, templates, and presentations lends itself to more organic capture and transfer approaches, which tend to require the knowledge holder to document and distribute the knowledge in a format others can access and absorb.
For example, Accenture’s knowledge capture efforts emphasize the harvesting and sharing of content such as:

1. engagement profiles, or internally created write-ups of the types of work done with clients;
2. proposals, which are presentations given to clients;
3. credentials, or formally approved externally usable documents, including examples of work used in a proposal presentation; and
4. general documents, which include market insights, project deliverables, strategy materials, thought leadership, and training materials.

Since Accenture is primarily interested in the exchange of written documents, it does not need to lay out exactly what needs to be shared by whom. Instead, it can encourage teams and individuals to submit relevant knowledge and then look for gaps that need to be filled.
By contrast, Lloyd’s Register: Marine’s process focuses on eliciting deep technical knowledge from experts and specialists. These individuals may not even realize everything they know, much less be able to discern what among their vast stores of knowledge is most important to capture and transfer. Thus, to support the flow of knowledge, the organization has developed a detailed process to identify the knowledge domains from which knowledge should be captured, survey employees about their areas of expertise, and recommend specific knowledge-sharing actions that employees can take to share what they know. Participants are asked to complete certain knowledge-sharing actions, such as engaging in knowledge capture interviews designed to elicit their knowledge, writing case studies to document lessons learned from key projects, and delivering presentations or oral stories focused on their career histories and experiences. Although some of the knowledge-sharing actions involve documenting knowledge in an explicit format, others (such as the interviews) require a facilitator to surface the knowledge and translate it into a shareable format. This type of knowledge elicitation would be difficult to accomplish without a systematic process.

**INTENDED AUDIENCE**

The second consideration is the size of the audience that might need the knowledge being captured and transferred and the extent to which those individuals can be identified ahead of time. Most systematic processes require organizations to specify not only the experts who possess unique knowledge, but also the learners who should participate in one-to-one or one-to-few transfer activities to absorb that knowledge.

Lockheed Martin’s knowledge continuity process is a good example. The process takes place in a team format, where each transfer project includes at least one of the following:

- **an expert**—an individual who has subject matter expertise to be transferred;
- **a nex’pert**—an knowledgeable individual who is in line to become an expert, but does not yet perform at the level of an expert; and
- **a practitioner**—a relatively inexperienced individual who knows little about the subject area being transferred, but has a reason to learn the material.

In order for knowledge continuity to succeed, Lockheed Martin must identify and engage the nex’perts and practitioners who would most benefit from learning and applying the experts’ knowledge. And because the process is used to transfer at-risk, critical knowledge related to specialized engineering programs, it is relatively straightforward for business leaders to pick out mid-career and junior engineers with the right backgrounds, experience levels, and career tracks to participate. It is critical for the organization to transfer its specialized knowledge to the next generation who will work on its mission-critical programs, but given the specialized nature of the knowledge, it would never be needed by people outside that narrow field.

However, for some of the other best-practice partners, the audience for knowledge is not limited to a handful of predefined recipients. For example, many positions within the U.S.
Department State Department operate on two- or three-year rotations, with staff moving in and out of roles in Washington, D.C., and various international posts. The diplomats and civil servants who work for the State Department do not necessarily know where they might be posted in the future or what knowledge they might need to succeed in those roles. In this type of environment, it would be impossible to define the potential audience for a piece of knowledge and engage those individuals in one-on-one or small group knowledge transfer. So the agency captures as much of the knowledge as possible in written or audio/visual format and then makes it accessible to anyone who might need it. The State Department accomplishes this through its many knowledge-sharing channels including communities of practice, an enterprise-wide wiki, and a system for tracking and archiving diplomatic cables and emails.

RATE OF CHANGE
The third question to take into account when designing a knowledge capture and transfer strategy is the rate at which the designated knowledge evolves or changes. In general, stable bodies of knowledge are more conducive to systematic capture and transfer approaches because it is easier for the organizations to pin down what knowledge is critical, who has it, and who needs to know it. In quickly evolving fields, however, what is included under the umbrella of critical knowledge and who the experts are may shift from one day to the next. These areas lend themselves to more organic approaches in which employees self-declare their expertise and contribute content and knowledge they believe is important to their disciplines. Because these grassroots approaches allow the people doing the work to define what is critical at any given time, they are usually more agile, quickly pivoting to encompass new developments and emerging disciplines.

With much of its work focused on IT, Wipro deals with many rapidly evolving knowledge domains. This is a major driver of its KM strategy, which involves harvesting as much content, knowledge, and expertise as possible from across the work force without predefining what constitutes critical knowledge. Instead of selecting specific domains from which to capture knowledge, Wipro encourages employees to think about all the knowledge that can be captured and shared from their projects including best practices, lessons learned, and reusable intellectual property. The organization also allows employees to register themselves as experts in its KONNECT system where colleagues can access quick answers to questions on particular topics. Instead of validating employees’ expertise as part of the registration process, the KM team looks at whether the experts are answering queries to decide whether they should be included in search results for colleagues seeking expertise. This type of organic approach, which uses real-time behavioral data to evaluate employees’ claims of expertise instead of a formal vetting process, works well for the fast-moving fields in which Wipro operates.

By contrast, the food science industry innovates at a sufficiently moderate pace that Kraft Foods can identify stable bodies of knowledge that are both critical now and likely to remain critical over the next five to 10 years. In fact, Kraft deliberately focuses its formal knowledge capture and transfer efforts on knowledge that is at least 80 percent stabilized (i.e., not likely to evolve significantly, become obsolete, or be replaced). This enables the
organization to take a more systematic approach, identifying experts from whom knowledge should be captured and recipients who will be responsible for learning and stewarding that knowledge over time.

It should be noted that the choice between systematic and organic approaches does not have to be an either/or selection. Several best-practice organizations have both systematic and organic elements to their processes. For example, Accenture emphasizes the importance of individual employees contributing content to its knowledge exchange system, but it also uses a more top-down approach to harvest content from key client engagements and communities of practice. Similarly, Lockheed Martin uses its knowledge continuity process to support strategic knowledge transfer needs, but at the same time encourages more informal sharing through communities of practice and other channels.

The questions in Figure 9 are not designed to help an organization select one path over another, but rather to think through potential knowledge transfer scenarios and select approaches appropriate for each situation and need. The next two sections delve further into the specifics of systematic and organic approaches by identifying key characteristics associated with the success of each.

Structure Systematic Knowledge Elicitation as a Time-Bound Event with Clear Goals, Milestones, Responsibilities, and Outcomes

In most cases, APQC advocates embedding knowledge sharing and collaboration into the flow of work, making KM an ongoing and natural part of employees’ daily routines. However, systematic knowledge transfer requires participants to carve out time for activities that are above and beyond their normal job duties—in other words, above the flow of their work.¹ For these approaches to succeed, the KM team must outline the limits and requirements of each engagement, including when it will begin and end, the number of hours involved, the outcomes that will be achieved, and the expectations of each participant.

As the experiences of the best-practice organizations with more systematic approaches demonstrate, it is much easier to convince experts and learners to engage in above-the-flow knowledge capture and transfer when the objectives, timeline, and commitments are laid out in a clear project plan. Given their packed schedules and in-demand status, experts want to know exactly what will be required of them before they sign on, and they are more likely to respond positively to structured activities than a vague plea to “share knowledge with colleagues.” Knowledge recipients also want to understand the end-to-

¹ For more information on KM in and above the flow of work, see Managing Knowledge in and Above the Flow of Business (APQC, 2011).
end process, including when and how knowledge will be made available to them and what they will gain from a professional/career development standpoint.

At Lockheed Martin, formal knowledge transfer takes place as part of the four-stage knowledge continuity process in which teams of employees:

- identify knowledge that needs to be shared,
- transfer it from an expert to the rest of the team,
- capture it in documents or other artifacts, and
- apply it in a group setting with the expert present to cement the learning.

Each knowledge continuity project has a clear business purpose, explicit goals, and a well-defined project plan. For example, a program might launch a knowledge continuity project because it needs more deployable talent in a particular area to meet customer needs or because it wants to document a process or procedure before a senior expert retires. The program would form a team to transfer skills and expertise associated with a given need and then disband the team once it meets its goals. The experts, nex’perts, and practitioners who make up the teams have clearly defined duties and expectations with regard to the process, which allows participants to understand what they’re getting into and helps the teams operate efficiently. According to data from when Lockheed Martin piloted the process in 2008, the average composite time invested by all members of a knowledge continuity team ranges from 60 to 114 hours, so team members are able to achieve effective knowledge transfer without abandoning their day jobs for extended periods.

Lloyd’s Register: Marine takes a similarly project-oriented approach to knowledge retention and transfer. A detailed framework guides employees through the four-stage process, depicted in Figure 10.

Knowledge Retention and Transfer Framework

![Knowledge Retention and Transfer Framework](image)

Figure 10
To begin the Lloyd’s Register knowledge retention and transfer process, the employee completes a survey designed to capture details on his/her role, responsibilities, tasks, key lessons learned, resources, and contacts. Each employee provides his/her answers to the knowledge capture survey in a structured template that becomes that person’s knowledge portfolio. Once an employee has completed the survey, he/she may be required to do some additional knowledge retention and transfer work, depending on management expectations and how his/her portfolio aligns with the organization’s business continuity plan.

In situations where Lloyd’s Register wants to capture additional knowledge from an employee, the KM team identifies knowledge-sharing actions for that person to undertake. The specific requirements are laid out in an action plan for the employee and his/her manager to approve, at which point the manager sets a timetable for completion and instructs the KM team and the employee on how to execute the plan. The project may take a year or longer, but over that interval, the KM team meets monthly with the employee, the manager, and an HR business partner to check on progress and address any obstacles. This approach helps keep all the stakeholders on track and ensure that knowledge retention and transfer projects meet their objectives.

At Kraft Foods, the R&D KM team uses a step-by-step process (Figure 11) to elicit knowledge from subject matter experts and translate it into written knowledge books representing in-depth information and expertise on particular fields of knowledge. The organization has outlined each step in detail, including the number of hours required from experts and the elapsed time required to translate the knowledge into its final published format. The knowledge book creation process ideally takes three months from start to finish, although some books take longer due to the experts’ availability.

![Steps to Create a Knowledge Book](image)

**Figure 11**

As a first step, a facilitator conducts a two-hour scoping interview with the expert to define the breadth and depth of knowledge to be captured. Based on this interview, the facilitator creates a scoping document that serves as a guide for the project moving forward. All the stakeholders must review and approve the scoping document, including
the expert, his or her direct manager, the executive champion for the project, and the recipient who will be responsible for maintaining the knowledge book over time.

Once the scoping document is approved, the facilitator conducts a series of conversations with the expert to bring forth the relevant knowledge. The facilitator can talk to the expert as many times as necessary to cover the items outlined in the scope, with each conversation lasting up to four hours. After each conversation, the facilitator translates the elicited knowledge into a series of visual models, which form the basis of the knowledge book content.

According to Kraft's KM team, translating the interviews into the models is time-consuming and often takes longer than the actual elicitation. Once the draft of the knowledge book is complete, it is passed back to the expert to answer any questions, as well as to edit, add to, and approve the content. The book is then given to its official recipient, an up-and-coming expert who will be responsible for sharing the book across the organization and updating it to reflect future developments.

Whereas systematic approaches benefit from project plans and clear expectations, more organic processes thrive on providing employees with options and making it easy for them to engage, as the next section describes.

Provide Multiple Channels for Informal Knowledge Capture, and Make It Easy

Among the best-practice organizations with more organic knowledge capture and transfer practices, the focus is less on formal elicitation and more on individual knowledge contributions. For these organizations, success hinges on engaging employees and convincing them to share knowledge in a central portal or another system where others can find and access it. The organizations make it easy for employees to capture and share knowledge by offering multiple ways to contribute and embedding submission options into the tools and applications employees use to perform their work. However, as with more systematic capture and transfer processes, organic approaches require organizations to establish clear expectations around knowledge capture and sharing and communicate those expectations to employees to ensure their participation.

A key part of Accenture’s knowledge capture strategy involves accepting contributions from individual employees. The organization does not have a gatekeeper approach to content submissions; any employee who wants to contribute can submit content to its Knowledge Exchange system, and all submissions are immediately available.

Accenture’s social learning team is currently debuting new processes for submitting content that are easy to use and incorporate content sharing into daily work activities. For example:
The team recently simplified the Knowledge Exchange content submission form to make it faster to fill out and more flexible.

Employees can submit content by specifying the title of the submission in an email subject line, including descriptive information in the email body, and attaching the content item to the message.

The organization also provides a desktop tool for submitting content. Once employees download the tool, they can launch the software and upload content items directly from their desktops. The tool also allows users to access the software by right-clicking on an individual file that they want to submit, at which point they see an option to submit the file.

On Microsoft SharePoint sites that have installed Accenture’s content sharing feature, employees can right-click any document for an option to submit the file to Knowledge Exchange.

To further simplify the content submission process, an offshore shared services group called Accenture Learning Knowledge Management Services reviews the submitted content and assigns metadata tags to each. This allows the organization to manage its content effectively without asking individual users to learn the taxonomy and add tags themselves.

The U.S. Department of State is also focused on streamlining the processes through which employees contribute and share knowledge. The organization makes its technology straightforward and accessible since not everyone within its workforce is tech savvy. “We want all of our tools to be so easy that you show up and right away you know what to do,” said Bruce Burton, senior advisor, Office of eDiplomacy.

To this end, many of the State Department’s platforms for publishing and sharing knowledge are based on common consumer technologies. For example, its communities of practice leverage WordPress blogging software, and its Diplopedia wiki is built on MediaWiki and looks a lot like Wikipedia. One of the easiest ways for employees to capture their knowledge is through the State Department’s record email system, which allows employees to use a standard Microsoft Outlook email format while saving their exchanges to a searchable archive. Prior to implementing this system, a great deal of information about key diplomacy decisions and why they were made was trapped in email exchanges that were not harvested, indexed, or preserved. Now, if employees think an email contains information that others might want to access later, they can move the entire thread to the searchable archive with one click. This makes it much simpler to capture critical knowledge around how and why certain decisions were made.

Like Accenture and the State Department, Wipro offers a wide range of channels through which employees can contribute content and knowledge. These include options to submit white papers, case studies, and best practices for publication, as well as ways to contribute know-how through in-person knowledge-sharing sessions, mindshare sessions where
experts or senior leaders share their knowledge on a topic suggested by employees, collaboration spaces, a wiki, and a chat platform. One of the organization’s more unique strategies to encourage content contributions is to hold quarterly contests for different content types. As part of one such contest, employees are encouraged to submit technical white papers to be evaluated. Judges then pick winners based on set criteria, including whether the content is current to a business context, the originality of the idea, the quality of the document, and whether it can be turned into a business offering. The contests are designed to foster a culture of knowledge creation, sharing, and collaboration, as well as to enhance employee knowledge.

Develop a Process to Capture and Transfer Knowledge Related to Specific Roles

In APQC’s last research report on knowledge transfer, Retaining Today’s Knowledge for Tomorrow’s Work Force, the participating best-practice partners had formal processes by which experienced employees could document job-related knowledge and make it available to individuals who would hold their positions in the future. The approaches included:

- **knowledge audits and structured interviews**—in-depth interviews in which experts outline what they need to know to perform certain jobs, including experiential knowledge and lessons learned;
- **handoff documents**—written records of everything a person would normally cover with his or her replacement, including primary job responsibilities, where and how documents are stored, contacts, a vision for the future, schedules, routine reports, and budgeting; and
- **lessons learned**—capturing of lessons and proven practices from a particular business process, project, or event for the benefit of job successors or others who must deal with similar projects/scenarios in the future.

Many of this study’s best-practice organizations’ knowledge capture and transfer approaches also incorporate elements of role-based knowledge transfer. The most obvious example of this is Lloyd’s Register: Marine’s knowledge portfolios, which are based on information employees provide through the knowledge capture survey. The portfolios follow a structured template and cover everything from responsibilities and tasks to lessons learned, helpful resources, and important contacts. According to Kate Garrett, knowledge and learning specialist at Lloyd’s Register, the portfolios are popular because they provide an extensive record of each role along with transition notes for new people shifting into that position.

However, other best-practice organizations choose to focus on knowledge associated with a discipline, specialization, or field, rather than a specific job. Kraft’s knowledge book creation process and Lockheed Martin’s knowledge continuity process reflect this
approach. The participating experts certainly transfer role-based knowledge as part of these techniques, but the emphasis is on their areas of expertise and not their positions. To complement these broader approaches, several of the partners have separate processes to capture role-based information.

For example, Kraft uses knowledge mapping as a fast way to capture knowledge related to specific roles. For this process, the organization outlines and visually depicts all the responsibilities that make up someone’s job, the connections and interdependencies among those elements, and any knowledge or skills that are unique to the role. The maps are useful in transferring basic information about a position. For example, a manager who is new to overseeing a particular technical area can review the maps to get a high-level view of how his/her employees spend their time and what they are responsible for. In addition, by highlighting knowledge and competencies that are unique to a role or individual, the mind maps can serve as a blueprint for future knowledge transfer or informal mentoring opportunities.

Lockheed Martin handles role-based skills development and knowledge transfer for certain employees through a technical talent management process. As part of this program, business leaders and managers identify core competencies and critical skills for their business areas. The managers then work with subject matter experts to create knowledge checklists (Figure 12) itemizing all the things someone must learn in order to become an expert in each area. The managers use the checklists as part of the annual goal-setting process with employees, showing them which items they have completed on checklist, which they haven’t, and what development activities they must complete to become experts in their respective areas.

Lockheed Martin managers have a range of approaches at their disposal to help employees build their skills—everything from formal training and participation in knowledge continuity to informal mentoring and on-the-job learning. But the checklists focus the process and ensure employees learn the right things at the right time in order to develop in their roles. The process also helps with onboarding new employees because managers can look at the records for past employees with similar skill sets, review the projects and development activities those individuals worked on, and assemble a list of potential experts for the new employees to talk to as part of their onboarding.

The U.S. Department of State does not have a uniform process to capture information about specific jobs, but it does create post reports summarizing information about each country or city where the United States has an embassy or consulate. These reports—which include information on everything from local cultural landmarks and events to regulations, transportation options, and more—help prepare State Department staff when they are assigned to a new international location. The reports used to be housed in a proprietary database, but the department has since moved them to the enterprise wiki, where it is easier for people to access and edit the information.
In addition to the post reports, the State Department is piloting a Portfolio Continuity program at its embassy in Kabul, Afghanistan. This embassy faces continuous crises, and information about people, places, issues, and organizations is crucial for achieving the post's mission and ensuring the safety of its personnel. However, preserving this knowledge is complicated by the fact that most personnel rotate in and out for one-year tours. To decrease time-to-competence for new staff members rotating in, the State Department created a SharePoint-based tool to bring together information that traditionally has been scattered. The portfolios cover everything from key contacts to lessons learned, with information categorized by issue, action office, and goals to foster consistency of presentation regardless of information type (e.g., published documents, working papers, and emails). Staff members have responded positively to the tool as a rich environment to capture relevant information and share it with current and future colleagues at the post.

Other Approaches Used by the Best-Practice Partners

Along with the best practices in this chapter, APQC noticed several additional themes in how the best-practice organizations capture and transfer critical knowledge. Overall, the partners offer more knowledge capture and transfer approaches than the sponsors do, but the differential is not significant (the partners average 15 approaches each, compared
to 12.4 each for the sponsors). More meaningful differences emerge, however, when reviewing the specific approaches in place and the extent to which they are leveraged.

For example, all the partners and 92 percent of the sponsors use communities of practice, process/workflow documentation, and collaboration sites to support knowledge capture and transfer. However, among the organizations that use communities and process/workflow documentation for this purpose, 60 percent of the partners reported using these approaches extensively or very extensively, compared to only 25 percent of sponsors. Overall, the partners are much more likely to use their knowledge capture and transfer approaches extensively or very extensively, which demonstrates the maturity of their programs and the extent to which knowledge capture and transfer is embedded into their processes and cultures. The sponsors, on the other hand, reported having many approaches that are used only occasionally or moderately. This may simply reflect the more recent introduction of knowledge capture and transfer approaches at these organizations, or it could suggest a lack of focus or clear expectations within their programs.

APQC also noticed that the partners are significantly more likely than the sponsors to use social media tools for knowledge capture and transfer (Figure 13). It is not surprising that the three organizations with more organic capture approaches leverage blogs, wikis, microblogging, and social networking to help employees contribute and share knowledge and expertise. But even the best-practice organizations with more systematic approaches take advantage of these tools to encourage sharing outside their formal elicitation processes. For example, both Lockheed Martin and Kraft Foods support internal microblogging platforms, and Lloyd’s Register: Marine uses wikis extensively for project-based collaboration.

To some extent, the popularity of social media tools across the best-practice partners demonstrates the degree to which these tools have entered the KM mainstream and proven their value as channels to support knowledge capture and transfer. APQC was somewhat surprised to see so few sponsors using social tools, but this may stem from the fact that many sponsors are still establishing their KM programs and are focused on deploying more classic knowledge transfer approaches such as communities and collaboration sites. It is also possible that the organizations have more conservative corporate cultures, and they may not yet have proven the value of social tools by articulating a clear value proposition and business purpose.
The best-practice organizations are also more likely than the sponsors to integrate knowledge capture and transfer with employee development approaches such as mentoring, apprenticeship, and job rotation (Figure 14). In some cases, this may stem from the close relationships between the KM and HR/employee development groups at the partner organizations. At Kraft Foods, for example, the same group is responsible for KM, intellectual property, and training, which creates natural ties between the outcomes of knowledge capture and the technical courses offered through Kraft University. Similarly, Lloyd’s Register: Marine worked closely with its HR team when developing its knowledge retention and transfer strategy, and HR has helped the KM group explicitly link knowledge retention and transfer to the organization’s employee development processes.

However, the partners’ use of training and development approaches to support knowledge capture and transfer may also reflect the maturity of their overall approaches, in which KM, formal training, informal mentoring, and on-the-job learning operate in tandem to ensure that critical knowledge is captured, shared, and passed on to the next generation of employees.
Development Approaches Used to Capture/Transfer Critical Knowledge

![Chart showing various development approaches used to capture/transfer critical knowledge, including percentages.

Closing Comments

This chapter looks at the various tools and approaches that the best-practice organizations use to capture, transfer, and share critical knowledge. In the next chapter, we explore the flip side of this issue—namely, how the partners enable access to critical knowledge including the tools and systems involved, the enablers that guide employees to the right resources, and any restrictions on access.

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Chapter 4: Managing Access to Critical Knowledge

Best Practices

1. Make critical knowledge broadly accessible unless there is a specific reason to restrict it.

2. Make access easy and part of employees’ workflow.

3. Offer self-service tools to navigate, filter, and customize the flow of knowledge—and provide a human support team as a last resort.

4. Leverage communities to help socialize knowledge and connect people to the right content, information, and expertise.

Organizations can define and document as much knowledge as they want, but if employees cannot access that knowledge—or if they don’t know where to find it when they need it—then the flow breaks down and the entire process is rendered moot. For this reason, it is important to look at how the best-practice organizations manage access to critical knowledge and expertise as a determining factor in how extensively the knowledge will be used in the future.

APQC defines access to critical knowledge as the act of encountering and retrieving knowledge through both “push” mechanisms, in which knowledge is delivered to users at predefined times, and “pull” mechanisms, in which knowledge is available on demand when users need it. The level of access encompasses everything from the way knowledge is stored to the search function used to surface it. It also includes various content delivery tools such as:

- shared sites, blogs, and wikis;
- expertise location systems;
- virtual and in-person forums for sharing knowledge;
- customized user interfaces and feeds;

For more information, see Accessing Knowledge: Step Six in APQC’s Knowledge Flow Process (APQC, 2013).
social tools that allow colleagues to recommend content, expertise, and resources; and
analytics that help surface high-quality, relevant knowledge to users.

The best-practice organizations in this study leverage a variety of tactics to make critical knowledge available to their target audiences. The organizations translate knowledge into numerous content “types,” including best practices, lessons learned, FAQs, case studies, standard project procedures, standard operating procedures, project profiles, how-to documents, seminars, webinars, and instructional videos. Knowledge is also provided in a range of formats, from written documents and spreadsheets to presentations, audio files, and videos.

Throughout the study, APQC noticed that the best-practice organizations strive to deliver critical knowledge to as many people as possible, rather than limiting availability on a “need to know” basis. They also make access fast and effortless and offer self-service tools to help employees navigate, filter, and customize the flow of knowledge. Finally, they rely on communities and social networks to help broadcast the knowledge and connect people to the right content, information, and expertise.

These steps sound so practical, yet they are often overlooked or taken for granted. The following sections in this chapter describe the actions taken by each best-practice organization to make accessing critical knowledge as easy and manageable as possible for employees.

Make Critical Knowledge Broadly Accessible Unless There Is a Reason to Restrict It

Making critical knowledge accessible to the entire work force helps organizations standardize their practices and break down silos among teams, locations, and business units. However, not everything is made to be shared. This is why the partners have embraced the philosophy of “share unless you can’t.” Through policy and cultural cues, they encourage employees to share knowledge with as many of their colleagues as possible and restrict access only in situations where it is necessary to protect classified content, trade secrets, client confidentiality, and other sensitive material.

The best-practice organizations’ critical knowledge can be divided into two broad categories. Technically oriented organizations such as Lockheed Martin and Kraft Foods tend to focus on specialized knowledge, whereas organizations like Accenture focus on more general knowledge. For those with more specialized knowledge, making knowledge broadly accessible may only apply to a particular part of the business. For example, knowledge about a complex engineering process is rarely needed outside that technical function, so it might make sense to restrict access to that knowledge. For organizations with more general knowledge, broad accessibility necessarily encompasses most or all of
the work force, with sanitization (i.e., scrubbing of client names or other specifics) and/or role-based access used to protect sensitive content.

Proprietary knowledge and intellectual property, whether internal or from a customer, are especially important to protect. For the most part, the best-practice organizations have guidelines in place regarding what can and cannot be shared in these cases. Organizations such as Wipro and Accenture remove client-related specifics from content such as proposals and project deliverables before they are shared. At Lockheed Martin, Kraft Foods, and the U.S. Department of State, access to these materials is controlled through role-based permissions.

Lockheed Martin encourages its knowledge continuity teams to share their knowledge in the least restrictive environment possible, taking into account any constraints attached to their projects and programs. When appropriate, the captured knowledge is also incorporated into other repositories and resources. For example, if a team creates a knowledge artifact that is broadly applicable, it might be added to the organization’s engineering learning portal. Similarly, if a team captures techniques or best practices that affect corporate or business-area processes, then the new knowledge is integrated into relevant documentation in Lockheed Martin’s process asset libraries.

Most of the content on Wipro’s intranet is available to all employees. However, to protect sensitive customer knowledge, the organization creates specific account and project spaces that are accessible only by members of the relevant teams. Wipro’s federated search excludes content from these spaces unless the individual searching is a member of the account or project team in question. In some cases, this restricted content can be disseminated more broadly once it is reviewed and stripped of account- or project-specific information.

Wipro’s risk management group helps the organization further protect its own and customers’ intellectual property. The group leverages a protection framework based on globally recognized standards and reviews certain content, such as white papers submitted by employees as part of quarterly contests, to guarantee that intellectual property is preserved.

At the U.S. Department of State, community sites can be designed for a department-wide, interagency, or classified audience, but most sites are open to anyone with access to OpenNet (the State Department’s intranet). Individuals with OpenNet logins also have full access to the department’s Diplopedia wiki. This includes local staff as well as embassy staff overseas, diplomats, civil servants, and contractors. The department’s official cables and record emails are similarly incorporated into its “need to share” environment, so the messages in the archive are searchable as long as they bear no restrictive (e.g., classified) markings. To protect confidentiality, the system uses role-based access control to determine what each individual can access in the archive.

Kraft Foods has intentionally kept its R&D Suite database as an R&D-only tool, instead of incorporating the content into an enterprise content management system. This is in
part to alleviate confidentiality concerns regarding the information contained in the organization's knowledge books, technical reports, and electronic laboratory notebooks. Only authorized staff can access the application, and its content is not indexed for enterprise search. Although access to certain technical reports is restricted even within R&D, the organization has established narrow criteria for such restrictions to promote an environment of openness and sharing among researchers.

By default, Accenture has established document usage restrictions for content. All employees receive training on how to determine the confidentiality level of documents. As such, the social learning program does not necessarily specify the acceptable use of specific content items. However, an offshore shared services group called Accenture Learning Knowledge Management Services manages certain transactional aspects of content management, including scrubbing and sanitizing content when needed.

Making knowledge available to employees is a crucial first step, but it is equally important for employees to be able to find what they need quickly and easily. This issue is covered in the next section, which describes techniques for building knowledge access into employees’ daily routines.

**Make Access Easy and Part of Employees’ Workflow**

When employees must navigate through disparate, time-consuming systems, it can dissuade them from seeking out relevant knowledge and resources. For this reason, APQC recommends using a variety of enablers to simplify access and make knowledge available to people at their teachable moments, when they are faced with challenges or opportunities that make them particularly receptive to learning.\(^3\)

This study’s best-practice organizations strive to understand the nature of the work performed by the employee groups with whom they collaborate as well as the work style preferences of those employees. The organizations generally use one or more of the following approaches to support access to critical knowledge:

1. Let individuals, teams, functions, programs, or business units decide where and how to store their knowledge and then enable broad access through a taxonomy and/or federated search.
2. Store knowledge centrally and make it accessible through custom views or feeds.
3. Encourage employees to look for knowledge at appropriate intervals by explicitly building this step into their processes and workflows.

A good example of the first approach is Lockheed Martin, which does not consolidate knowledge in a single repository due to the rules and requirements of its various projects.

\(^3\) For more information, see *Delivering Knowledge at the Teachable Moment* (APQC, 2011).
and programs. Many of the organization’s knowledge assets are classified, subject to expert control security, or classed as proprietary/trade secrets. To protect these items while still enabling easy access, employees are encouraged to store content in locations that make sense for the specific teams that may need it in the future. Most teams choose to house their knowledge in shared folders or servers specific to their programs, SharePoint repositories, or in-house social networking sites.

This approach makes it easy for teams to access knowledge related to their own projects and programs, but Lockheed Martin needed a mechanism to make relevant resources accessible across programs. To achieve this, the organization implemented a unified search tool called SearchLM. Content from all appropriate repositories and sites is indexed for this search. The result is that the search mechanism reaches across all repositories and sites that are free and open to share, excluding restricted or classified information.

Kraft Foods aims to make R&D knowledge easy to access, even for employees with minimal technical skills. For example, the organization creates its knowledge books in PowerPoint because employees are comfortable with the technology and accessing knowledge in PowerPoint does not make them feel like they are being asked to use something outside their normal workflow. The organization also explicitly builds access to knowledge into the R&D process through its Innovator’s Framework (Figure 15), which guides people on when and how to search for existing resources.

As part of the framework, employees are given questions to ask themselves at each stage of the product development process along with actions that ensure they apply KM best practices. For example, when starting a new project, employees are encouraged to ask, “What’s been done before, and what did you learn?” and then search the organization’s R&D Suite database for documentation on similar past projects. According to Kraft’s R&D KM team, the framework resonates with employees because it is simple and provides straightforward advice to integrate KM into the flow of daily work.

Accenture is looking at numerous tactics to make it easier for employees to find and use relevant knowledge. These include providing personalized search results to users, encouraging people to interact and share expertise through communities, applying analytics to identify content of particular interest to a given user or audience, and improving access to content through mobile devices.
In addition to enabling easy access to knowledge, the partners also help employees navigate through the resources available to them, as the next section describes.

**Help Employees Navigate, Filter, and Customize the Flow of Knowledge**

At organizations where most knowledge is shared enterprise-wide, customization and filtering are vital to help employees find what they need without having to sift through massive piles of material. And even at organizations focused on more specialized content, the KM teams still need to help employees access knowledge efficiently and effectively.

The best-practice organizations in this study use a variety of tools and approaches to connect employees to knowledge and expertise. Among the most popular are: expertise location systems; microblogging; communities of practice; and internal conferences, seminars, and webinars (Figure 16). The partners also use enablers to help employees filter and find knowledge, including alerts when content is added or updated, taxonomies, and custom feeds (Figure 17). Most organizations leverage a portfolio of tools, approaches, and enablers to provide employees with options that fit their work styles and preferences.
Figure 16

It is important to recognize that not all the mechanisms for filtering and customizing knowledge access are technical. A good internal conference or mentoring program can connect employees to colleagues who can answer specific questions or guide them to the best knowledge and resources. In addition, several of the best-practice organizations have human support teams that can help employees access critical content when they cannot find what they need through self-service tools.
Lloyd’s Register: Marine’s People Finder expertise location system is one of the organization’s key tools to enable access to knowledge and expertise. To improve the value of the system, the KM team supplemented basic HR data with information on employees’ technical backgrounds and academic qualifications collected through a knowledge capture survey. However, the information was not consistent when it was first put into the tool. To address this, the KM team partnered with HR to create a taxonomy for People Finder and make it easier for employees to find colleagues with the appropriate skills and expertise.

At Accenture, search is one of the key tools to guide employees to knowledge. The social learning team recently made improvements to the search capability in order to provide users with faster, more relevant search results. As part of this project, the organization expanded filter options for search results and built in feedback capabilities so that users can rate their search results. The social learning team is also working to improve the
taxonomy tags for content and ensure that fresh content is being added to the Knowledge Exchange system. Accenture has a search center of excellence that invests in search capabilities and educates employees on the proper maintenance of content and correct tagging to ensure quality search results.

Accenture also leverages analytics to anticipate user needs. When a user conducts a search for content, the Knowledge Exchange system directs the user to other content that may be of interest. Similarly, when a user views a piece of content, he or she can see what others have downloaded in addition to that content item. The portal also provides users with recommendations on communities associated with specific content items.

Wipro addresses the need for customization by creating separate KM portals for different segments of the workforce, including functions such as sales, consulting, and business process outsourcing and demographic groups such as Millennials. The portals provide employees with tailored content and KM approaches based on what they are most likely to need. For example, project teams tend to want processes and domain-specific knowledge/trends, whereas the business process outsourcing team is most interested in reusable customer solutions. A dedicated knowledge manager sets up and maintains the portal for each segment, ensuring a consistent stream of updated and relevant knowledge.

Wipro also customizes search results for individual users. For example, project- and account-specific content is normally excluded from searches, but these items are included if the user is part of the associated project or account team. The search function also indexes conversations and chats that occur through the organization’s collaboration tools, with each user seeing only those archived conversations in which he/she participated.

Lockheed Martin employees have numerous tools to help them navigate to relevant knowledge and expertise, including a federated search function, communities of practice, an expertise locator, and the LM Fellows Collaboration Network where they can request advice or assistance from one of the organization’s top experts. If employees cannot find the expertise they are looking for, then as a last resort they can use a help button available on the engineering storefront. Requests submitted through the help button are routed to the Corporate Engineering and Technology group, which uses its extensive networks to find an appropriate expert either inside or outside the organization. Corporate engineering and technology is able to answer most help button requests within 24 hours.

SearchState is the U.S. Department of State’s enterprise search service. It enables personnel to find the information they need among the millions of items in agency Web sites and databases. Employees can access SearchState in three ways: the search box in the Internet Explorer toolbar in their browser, the SearchState home page, and the OpenNet home page.

The State Department’s KM team has structured the search function to rank articles from the organization’s Diplopedia wiki higher than other results. This encourages people to use the wiki and ensures that they have fast access to fundamental information. Employees also receive a curated selection of top matches when they submit search
queries. These items have been identified as critical resources containing content that people look for on a constant basis. The State Department’s search support team consults a range of sources to identify top matches, including download statistics, analytics about what people are searching for, and input from users and business owners. In this way, top matches add human intelligence to search through feedback and subject matter expertise.

A support team is also in place if State Department users experience trouble or cannot find what they are looking for. The support team can be contacted by clicking a link on the search results page, and an email automatically fills in the subject they were searching for and then asks them to provide any additional context. The message goes to the support team, which tries to respond within 15 to 20 minutes with the resources the user needs. These human interventions ensure that people find what they need and provide opportunities for the support team to educate users on how to search effectively.

In addition to search and custom views, communities are another tool for employees at best-practice organizations to filter knowledge and leapfrog to the best content and expertise. This is discussed in the next section.

Leverage Communities to Help Socialize Knowledge

In APQC’s Retaining Today’s Knowledge for Tomorrow’s Work Force study, the project team observed several best-practice organizations that relied on their communities of practice to identify and capture critical knowledge. However, in this study, we saw a different use of communities. Although the partners’ communities and networks play some role in documenting knowledge, their primary function is in "socializing" the knowledge—that is, promoting it and making sure it is shared with the right people at the right time to maximize reuse.

Many of Lockheed Martin’s business areas have robust communities of practice to facilitate access to information and expertise along with collaboration and networking. A main focus of communities is to share knowledge and expertise across programs and projects. Community members help one another learn through virtual knowledge-sharing events, wikis, blogs, and discussion boards.

At Accenture, social learning catalysts help connect communities to relevant content and drive community-focused content harvesting. The organization leverages the power of communities to capture key sales documents and other critical content. This type of harvesting, which is conducted one to two times per year to fill identified content gaps, may include “hard drive campaigns” that encourage employees to review their hard drives to identify valuable content. However, communities play an even bigger role in connecting employees to existing content and expertise. Activity streams on community sites update members on new resources and help them share content, ask and answer questions, and connect to colleagues. Community sites also link to the organization’s best materials on those particular topics. Each site has a tab with a search function that is
unique to that community. When a community member searches using this function, the search results list content within the community first, which helps employees find relevant, high-quality items from fellow community members.

At the U.S. Department of State, Corridor and the Current are key tools for sharing and socializing knowledge. Corridor is the State Department’s in-house professional networking platform. Anyone with a Corridor profile can join more than 750 groups on topics ranging from mobile computing to leadership development. Group members receive email notifications of new information in their groups; they can also see feeds from their groups in the Current, a platform similar to the now-retired Google Reader where employees can integrate a wide variety of internal and external sources into a single interface. The Current allows users to create up to 10 personal, continually refreshed pages tailored to their roles, affiliations, and interests. They can also share these custom pages with colleagues who have similar roles or interests.

Closing Comments

This chapter explores tools and tactics to help employees find the knowledge they need without wasting time or dealing with unnecessary restrictions. Access to critical knowledge is always a balancing act among supplying useful resources, filtering out noise, and ensuring that sensitive content is sufficiently protected. For the most part, the best-practice organizations achieve this balance by combining easy-to-access repositories with role-based access, custom or community-specific views, robust search functionality, and advanced filtering mechanisms.

But even with such user-friendly tools, the partners still need to adapt their programs to their organizational cultures and motivate employees to participate. The next chapter discusses change management tactics for knowledge capture, transfer, and reuse including senior leadership support, training, communications, branding, rewards and recognition, and links to performance management.
Chapter 5: Managing Change Related to Knowledge Capture, Transfer, and Reuse

**Best Practices**

1. Embed knowledge champions and change agents in the business.

2. Make knowledge capture, transfer, and reuse measureable aspects of employee performance.

3. Help employees understand the level at which they are participating and allow for friendly competition.

Throughout this and other benchmarking studies, APQC has observed a pattern in how best-practice organizations manage change associated with their knowledge management tools and approaches. Over time, we have come to think of certain elements as change management fundamentals: enablers that almost every successful KM program puts in place to make employees aware of the tools and approaches available to them, when to apply each approach, and the value proposition of participation for themselves and the organization.

For the most part, the best-practice organizations in this study adhere to the pattern established in previous research. The change management practices they employ are essential to the success of their KM initiatives and lay the foundation for sustainable, knowledge-sharing cultures. However, the study team has not singled all of them out as best practices in the context of this study, opting instead to describe them in a separate section at the beginning of the chapter.

In addition to these change management fundamentals, APQC noticed several newer themes in how the best-practice organizations build knowledge activities into their cultures and encourage employees to adopt new behaviors. First, almost all the partners look for change agents in the target business groups to champion and support knowledge capture and transfer activities. They also incorporate data on employees’ willingness to share and apply knowledge into their performance management processes and provide consistent feedback to employees on their level of KM participation.
Change Management Fundamentals

This section describes how the best-practice organizations leverage and apply change management fundamentals, including:

- active support and endorsement from senior leaders;
- a robust communications campaign encompassing posters, fliers, emails, intranet marketing, and messages at meetings and events;
- formal and informal training for employees at all levels;
- a reward and recognition strategy designed to motivate participation; and
- a common message or brand to draw attention and tie the program together.

SENIOR LEADERSHIP SUPPORT

Regarding senior leadership support and endorsement, 100 percent of the surveyed best-practice organizations report that their senior leaders are either strongly or very strongly supportive of knowledge capture, transfer, and reuse, compared to only 31 percent of sponsors. All list senior leadership endorsement as a change enabler, and a majority report that active participation by leaders, process owners, and managers helps drive engagement throughout the work force (Figure 18).

Senior leadership support drives participation in knowledge capture, transfer, and reuse at all the best-practice organizations. For example, Kraft Foods executives emphasized the importance of knowledge capture and transfer in anticipation of the spinoff of Mondelēz International, and this attention helped R&D exponentially increase the amount of knowledge being documented. At Lloyd’s Register: Marine, support from leaders and managers drove employees to fill out their knowledge capture surveys, even though it was not mandatory. Similarly, at the U.S. Department of State, participation in the Corridor professional networking platform spiked when then-Secretary of State Hillary Clinton recorded a message promoting the tool.

APQC believes the level of executive support enjoyed by the best-practice organizations is, at least in part, a benefit of the extent to which they involve their business leaders in designing the knowledge transfer strategy and identifying critical knowledge to capture and transfer, as outlined in Chapters 1 and 2 of this report. It is typically much easier to get people to support and participate in something they had a hand in creating.
COMMUNICATIONS AND BRANDING

All the best-practice organizations produce a range of communications to support their knowledge capture and transfer programs (Figure 19), although Accenture and Wipro have the most comprehensive internal marketing strategies.

At Accenture, the social learning team uses analytics to understand employee behavior and create custom messages for each audience. The campaigns include everything from postcards to videos, but all the messages are visual and creative in order to engage the recipient. Marketing around social learning has been hugely successful, driving much higher click-through rates than standard Accenture communications, and has been emulated by other groups across the organization.

Wipro leverages a range of newsletters, posters, and quizzes to help engage employees in KM tools and approaches. For example, the KM team publishes six weekly and monthly newsletters for different audiences. Some of these focus on new tools and updates, some highlight success stories and reusable content, and others feature videos of leaders,
experts, and employees. Along with these newsletters, the KM team sends out weekly quizzes covering everything from the organization’s business units, service lines, and functions to practices and customers. The quizzes are intended not only to enhance employee knowledge, but also to make employees aware of the knowledge resources available to them.

**Communications to Promote Knowledge Capture, Transfer, and Reuse**

Several partners have even built formal brands for their knowledge transfer initiatives. For example, Lloyd’s Register: Marine created a simple branding message to ensure employees were aware of its knowledge retention and transfer program. The campaign revolved around a series of animations and a logo featuring the word “share.” Similarly, Kraft Foods created a brand for its Innovator’s Framework, a toolkit to help researchers innovate by integrating the competencies and best practices of KM, open innovation, and intellectual property into the product development process.

**TRAINING**

As Figure 20 shows, all the best-practice organizations provide some form of training to support knowledge capture, transfer, and reuse. Formal training tends to be most effective when it targets specific audiences. For example, Lloyd’s Register: Marine created...
a one-hour master class for managers where they learned about the knowledge retention and transfer process, what it could do for their teams, how it links to business continuity planning, and what best-practice knowledge outputs look like.

Training for Knowledge Capture, Transfer, and Reuse

The partners tend to combine in-person training with virtual and self-paced resources. For instance, Kraft Foods offers a mandatory training course on its R&D Suite database through Kraft University, but this training is supplemented with a wiki that contains text tutorials, screenshots, and videos on how to use the system. Similarly, Accenture supplies many training options, including:

- short videos on the value of collaboration and the steps to get started;
- 30-minute to one-hour self-paced training modules;
- live virtual sessions; and
- in-person training at Accenture’s central training facility.

The U.S. Department of State has incorporated information on the purpose and value of its Corridor networking platform into training at the Foreign Service Institute, which ensures that new hires understand how to use Corridor to connect with colleagues, find expertise, and share interests.
Perhaps most interesting are the mechanisms for informal training in place at several of the best-practice organizations.

At Kraft Foods, the KM team promoted adoption of its R&D Suite database for technical reports by hosting open support sessions, called study halls, where employees could get help using the application. The study halls were designed to provide a casual, friendly environment: the KM team booked a conference room, brought coffee and donuts, and played music in the background. Employees were encouraged to come and go when they wanted, ask questions, and collaborate. Overall, the KM team found this to be an effective way to engage employees who did not feel comfortable seeking more formal support, but also did not want to use the self-service learning resources.

Lloyd’s Register: Marine took a similar approach with its knowledge capture “surgeries,” which were in-person open sessions where employees were invited to ask questions and receive hands-on guidance to complete their knowledge capture surveys.

The U.S. Department of State has pursued a different type of informal training involving contests aimed at the department’s interns. The first contest encouraged reverse mentoring by asking the interns to teach their managers how to create networking profiles in Corridor. In return, the interns received a lunch with a mid-level manager. A second, similar contest prompted the interns to get all their colleagues to complete Corridor profiles, and the winners had a group picture taken with the Secretary of State.

**REWARDS AND RECOGNITION**

Formal rewards structures for knowledge capture and transfer are not universal across the best-practice organizations, but some use awards and recognitions to encourage participation (Figure 21). For example, Wipro gives out KM awards on a quarterly basis, including acknowledgements for the expert with the best number of responses and best knowledge harvester along with other awards for those who access and use the available content. Winners receive certificates, and some awards come with bonuses.

Despite Wipro’s formal awards structure, its KM team has found that employees are less interested in tangible rewards than in seeing how they can enhance their skills and knowledge. Similarly, Lloyd’s Register: Marine recognizes avid community of practice participants through a newsletter, but its KM team believes that understanding the fundamental benefits of KM is far better motivation than these formal acknowledgements.
Rewards and Recognition for Knowledge Capture, Transfer, and Reuse

Some best-practice organizations have deliberately moved away from explicit rewards. For example, Kraft Foods’ R&D KM team used to acknowledge prolific publishers of technical reports, but it has downplayed this in recent years because the expectation is that everyone will publish reports on their projects. Other partners have rolled rewards and recognition into related initiatives such as gamification, as described later in this chapter.

Regardless of the presence of explicit rewards, all the best-practice organizations have embedded knowledge capture, transfer, and reuse in their underlying cultures, as the next three sections describe.

Embed Knowledge Champions and Change Agents in the Business

In its 2012 report *Putting Knowledge in the Flow of Work*, APQC observed the best-practice organizations supplementing their KM core teams by recruiting employees in the business units to assume some responsibility for promoting and enabling knowledge sharing. This trend continues in the current study, with the majority of the partners reaching out to people in the business to champion knowledge capture, transfer, and reuse.

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4 For more information, see *Recruit Employees to Act as Knowledge Advocates in Their Respective Business Units* (APQC, 2012).
reuse. In some cases, the organizations have even formalized these roles by creating full-time positions or asking designated employees to devote a certain number of hours to KM support.

When Lloyd’s Register: Marine piloted its knowledge retention and transfer (KRT) process, it realized it needed change agents in its global offices, rather than having someone from the central KM team visit to perform the initial rollout and then leave. In response, the organization created the KRT specialist role, through which individuals with HR or engineering backgrounds spend two to three hours per week supporting knowledge retention and transfer. KRT specialists help identify potential candidates for knowledge capture, oversee the execution of employees’ knowledge-sharing plans, and promote the benefits of knowledge sharing to their local offices. According to the KM team, the creation of the KRT specialist role was a significant factor in promoting and embedding the KM strategy across the organization.

Accenture recently created a full-time social learning catalyst position to help drive the social learning program within specific Accenture businesses. The organization currently employs 15 social learning catalysts, with the positions funded by the associated business groups. The catalysts help connect communities of practice to relevant content, drive community-based content harvesting, and implement content and collaboration approaches on behalf of the businesses. They also serve as an important link between the social learning team and the rest of the organization, ensuring that those designing KM and collaboration solutions are aware of end-user feedback.

At Wipro, an extended team of 120 employees provides part-time KM support for the organization’s operational functions and service lines. Each operational function has a KM single point of contact as well as a knowledge champion or knowledge manager. The contact and knowledge champion/manger ensure that knowledge is identified, that employees and customers know how to use the available knowledge, and that it is deployed throughout the organization.

Lockheed Martin has a less formal process for identifying and empowering knowledge champions within its business areas. It seeks what it calls “enlightened leaders” to pilot KM tools and approaches. Enlightened leaders are defined as senior-level people who are open to new ideas and willing to change things up when there is a compelling value proposition. Using these leaders as early adopters, the organization relies on success stories and word-of-mouth to grow support for KM initiatives. It also engages community of practice leads and former knowledge continuity participants to spread the word regarding the benefits of knowledge capture, transfer, and reuse.

These types of champions and change agents can help connect a KM team to knowledge workers out in the business and re-emphasize the benefits of knowledge sharing. Another way to communicate those benefits is to integrate knowledge-sharing competencies into performance management, as the next section describes.
Make Knowledge Capture, Transfer, and Reuse Measureable Aspects of Employee Performance

Again, APQC has noticed a slight shift away from organizations using explicit rewards to motivate KM participation. However, this trend is part of a broader one in which organizations are building recognition of knowledge activities and competencies into their primary employee development and performance management systems. Many of this study’s best-practice partners make participation in knowledge capture, transfer, and reuse a criterion to gauge overall employee performance, which helps embed knowledge-sharing behaviors in the culture and reinforce the value of KM to the business.

At Lloyd’s Register: Marine, employees are measured on knowledge-sharing behaviors as part of their yearly performance reviews. The organization has a dictionary containing definitions of all its behavioral competencies; by working with the group that created the dictionary, the KM team has been able to add definitions for knowledge-sharing activities. The competency dictionary now includes definitions for knowledge networks, knowledge retention and transfer, collaboration and sharing, and mentoring/coaching. Information about knowledge retention and transfer has also been incorporated into the organization’s career framework, which tells employees how well they are performing in their current roles, the level of proficiency they should be demonstrating, and what they need to do to move to their next positions.

Accenture also links knowledge sharing to performance management. The organization’s research shows that social learning drives high performance and that high performers engage more in social learning and knowledge sharing than their peers do. For this reason, employees’ level of participation is considered during their annual performance reviews.

Lockheed Martin does not incorporate knowledge transfer and sharing into all performance evaluations. However, employees have the option to include community leadership and participation, as well as other knowledge-sharing activities, in their individual performance goals. Over time, HR has seen more people incorporating KM into their performance plans and receiving credit for their contributions. The organization believes this is a sign that knowledge transfer and sharing have been fully embedded in its culture.

At Kraft Foods, the links between KM and performance management are less formal. That said, everyone within R&D is expected to capture and reuse knowledge, and if specific employees are not participating, it is likely that their managers and colleagues will pressure them to do so. In addition, the organization encourages managers to ask questions from the Innovator’s Framework during project reviews and performance review meetings to ensure that employees are documenting and applying knowledge throughout the product development process.
Although ties to performance evaluations are useful to draw employees’ attention to desired behaviors, many people benefit from more frequent feedback related to their KM participation. The next section discusses ways that the best-practice organizations achieve this.

Help Employees Understand the Level at Which They Are Participating and Allow for Friendly Competition

The best-practice organizations have seen positive benefits from linking KM to performance management, but receiving feedback during an annual review or goal-setting session may not be sufficient to change behavior. To address this, several partners provide employees with more frequent data regarding their personal participation levels as well as those of communities or groups they manage. This stream of information keeps people aware of the extent to which they are contributing and reusing knowledge and helps spur friendly competition among individuals, teams, and parts of the business.

One of the most obvious ways that the partners provide real-time feedback is through gamification, which is a centerpiece of Accenture’s employee engagement strategy. At Accenture, collaborative behaviors are tracked through a points-based system that rolls up each employee’s performance on 30 participation-focused metrics into a composite score. Scoring is weighted toward quality, rather than quantity. For example, employees who write blogs are rewarded based on the number of views and downloads their posts receive, not merely the number of posts they write.

Data from gamification feeds into Accenture’s Addo Agnitio Award recognition program, and employees can access a portal for the awards program to track their collaboration activities and determine their scores. Scores are reviewed quarterly, and top collaborators receive a gold or silver star, a recognition letter from leadership, and a small monetary award based on the number of points they have earned. Winners also receive badges to display on their internal profiles and have their awards noted in their annual performance reviews.

Wipro also uses gamification, but its strategy focuses on engaging Millennials in learning and knowledge sharing. The organization administers a range of virtual and in-person games modeled after sports such as arm-wrestling, marathon running, and cricket. Some games are designed to help employees build their skills in a fun and competitive environment, but others directly encourage knowledge-sharing actions such as contributing content to Wipro’s knowledge base, blogging, or sharing via the organization’s wiki.

APQC finds that gamification is valuable in part because it provides employees with real-time (or near real-time) feedback. It helps them understand how much they are participating and how their level of engagement compares to that of their peers. The
other best-practice organizations have not embraced games per se, but they use other mechanisms to help employees track progress and encourage competition.

At Lloyd’s Register: Marine, employees receive feedback on their participation through progress meetings related to their knowledge-sharing plans. As part of its knowledge-sharing competency definitions, the organization provides an A through E grading system to help employees understand where particular knowledge-sharing activities fall in terms of extent of commitment and value.

At Kraft Foods, feedback and competition are team-based, rather than individually focused. The KM team reports measures such as the number of technical reports published per month to senior managers, who publicize the statistics throughout the organization. The reporting breaks out knowledge contributions by business unit, which encourages informal competition among the businesses to keep up with documentation. The business unit leaders, in particular, do not want their units to have the lowest number of technical report submissions.

The U.S. Department of State uses analytics to help community leaders and knowledge contributors understand how much sharing is going on and how specific groups and sites are performing. The knowledge leadership team publishes a weekly Knowledge Leadership Initiative report on who is using knowledge-sharing and collaboration tools, when they are using them, and what they are using them for. The analytics help community administrators understand how well their communities are performing. The Corridor networking groups use analytics to determine whether their groups are thriving and what kinds of information people are searching for. The knowledge leadership team encourages community and Corridor administrators to use the analytics to promote the successes of their communities and groups.

**Closing Comments**

As the examples in this chapter convey, the best-practice organizations’ programs are successful, at least in part, because their KM teams understand how to engage people and motivate them to capture, transfer, and reuse knowledge. The next and final chapter examines how the partners complete the knowledge flow cycle and ensure that knowledge is ultimately applied in ways that encourage employee development and benefit the business.
Chapter 6: Ensuring That Critical Knowledge Is Applied and Used

### Best Practices

1. Build elicited knowledge into documentation, training, and learning resources.
2. Make stakeholders explicitly accountable for contributing and applying knowledge.
3. Use measures and success stories to demonstrate the value of knowledge reuse.

Throughout this report APQC notes how knowledge flows through organizations from experts and knowledge holders to those seeking information and expertise. However, it is important to remember that knowledge does not benefit a business until it is used in new situations. It is APQC’s experience that many organizations create wonderful processes and approaches to identify, collect, review, and share knowledge, but they fall short of actually ensuring that the knowledge is applied. This gap may occur for many reasons, including a lack of awareness that the knowledge is available, a lack of awareness of the processes and tools for accessing it, an inability to determine how to adapt the knowledge to new purposes, or a cultural bias favoring invention over reuse.

This chapter discusses different approaches that the six best-practice organizations take to ensure their critical knowledge is applied and used. First, they integrate the knowledge they capture into sources of record, whether that means process documentation, formal training, or self-service learning content. They also create clear guidelines and accountability around when, where, and how existing knowledge should be applied. Finally, the partners reinforce and communicate the importance of knowledge reuse through metrics and success stories.

### Build Elicited Knowledge into Documentation, Training, and Learning Resources

A recurring question that KM groups ask APQC is, “How do we encourage people to reuse knowledge?” The sponsors in this study face the same challenge. They identify and capture knowledge, validate it (when necessary), and make it accessible for sharing and transfer. So why don’t employees find and apply it to help them solve problems or
complete tasks? In APQC’s experience, breakdowns in this last step of the knowledge flow process often have to do with context, situation, and value proposition.

APQC’s report *Putting Knowledge in the Flow of Work* identified a best practice that is particularly applicable here: Embed knowledge-sharing and collaboration approaches in project and process management methodologies. As Figure 22 shows, all the surveyed best-practice organizations align knowledge capture, transfer, and reuse with project management, process management, or both. By comparison, less than half the sponsors make any connection between knowledge capture and project/process management.

**Alignment of Knowledge Capture, Transfer, and Reuse with Project and Process Management**

![Alignment of Knowledge Capture, Transfer, and Reuse with Project and Process Management](image)

Dr. Carla O’Dell, CEO of APQC, is fond of saying, “Put knowledge where people will trip over it.” The best-practice organizations involved in this study embrace that philosophy, too. Realizing that there would be no point in expending resources to identify, capture, and transfer critical knowledge if no one took advantage of the artifacts produced, the partners gave serious consideration to employees’ habits and preferences before designing mechanisms to encourage them to reuse knowledge. On top of this, the

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5 For more information, see *Embed Knowledge Sharing Approaches in Project and Process Management Methodologies* (APQC, 2012).
best-practice organizations usually provide more than one path to knowledge, tailoring each approach to the target audience. By understanding the context and situation in which their audiences work and learn, the partners’ KM teams have built powerful value propositions for employees to reuse critical knowledge.

- First, the knowledge is easy to find because it is built into the processes and tools that people use to do their work.
- Second, the knowledge is presented in such a way that employees can easily match the right resources to a given situation.
- Finally, the knowledge is targeted to help employees do something important, such as solve a problem, complete a task, or develop a competency.

For example, Kraft Foods promotes the reuse of knowledge within R&D by linking its KM program to its technical training initiative. Because the same director is responsible for both KM and training, the organization has been able to directly link its knowledge books to technical training offered through Kraft University. To date, a corresponding training course has been created for every knowledge book Kraft has completed. This connection serves two purposes. First, the expertise documented in the knowledge books provides a foundation to develop training material and teach employees about Kraft’s most important fields of knowledge. Second, the training courses are a way to make employees aware of the knowledge books, R&D Suite, and other resources available to them through KM initiatives.

The KM team at Lloyd’s Register: Marine emphasized that it does not want to document critical knowledge only to have it sit in a database gathering virtual dust. Among the main outputs of the organization’s knowledge retention and transfer process are technical procedures and guidance, which employees access in the course of their work. Knowledge portfolios, which contain job-specific knowledge, are made available to smooth the transition when employees shift into new roles. In some cases, the KM team uses captured knowledge to develop training information guides for specific roles or areas of the business. For example, the team created a radio communications training guide based on knowledge capture interviews it conducted with a retiring radio communications expert.

The Lloyd’s KM team also strives to link knowledge retention and transfer outputs to pre-existing documentation and sharing practices across the organization, including:

- schedules for teams or knowledge areas;
- training, group learning sessions, and e-learning;
- video capture to support process maps; and
- technical guidance and procedure manuals.
The team believes that clear links between documented knowledge and other learning resources are important to ensure there is consistent technical guidance around procedures that can be applied on a global scale.

Lockheed Martin’s knowledge continuity process combines knowledge capture and transfer with an embedded training element. The process designers explicitly included “Apply” as one of the four process stages to ensure that experts and practitioners have opportunities to use what they’ve learned with the expert and the rest of the team present. When originally piloting knowledge continuity, the organization found that teams that did not go through the Apply step were much less likely to use what they learned after the project ended. “In our pilots, there was a huge focus on capturing the knowledge,” Engineering Change Organization Team Program Manager Patti Scaramuzzo said, but “capture is irrelevant if you don’t apply it the knowledge while the expert is present.”

Knowledge captured through knowledge continuity is incorporated into processes, procedures, training, and learning materials whenever appropriate. For example, if a team creates a knowledge artifact that is broadly applicable, then it might be added to the engineering learning portal. Similarly, if a team captures techniques or best practices that affect corporate or business-area processes, the new knowledge is integrated into the relevant documentation in the organization’s process asset libraries.

One of Wipro’s key approaches to promote knowledge reuse is its seek, hands-on, interact, network, and enrich (SHINE) framework. SHINE is a training approach to induct new employees into customer accounts. The steps in the SHINE process are:

- **seek**—employees learn about relevant project areas with minimal assistance from a mentor;
- **hands-on**—employees learn from taking on various assignments and receive assistance from a mentor;
- **interact**—employees are encouraged to ask questions during learning sessions, web chats, and other activities;
- **network**—employees join relevant networks and learn from experts in those networks; and
- **enrich**—employees with similar knowledge needs learn from one another with the help of a mentor.

Wipro's SHINE framework combines content and knowledge collected throughout the organization with instruction and active learning. When an employee is added to a project or account, he/she goes through the SHINE process to learn about products and technologies and then apply that knowledge in a structured setting to cement the learning.

At Accenture, the entire content and knowledge management system serves as a learning resource. The mission of the social learning program is to enable employees to learn from
one another through collaboration and knowledge sharing in order to bring the best of Accenture to clients. The social learning team aims to connect Accenture employees to the collective wisdom of the organization through documents, communities, ideation, and experts and to accomplish this outside of the bounds of formal training.

Embedding elicited knowledge into documentation, training, and learning resources is only half the application and reuse equation, however. The other half is accountability. Who should be answerable for ensuring that people contribute and apply knowledge? Does responsibility rest solely with the end-users applying knowledge? Or is accountability shared among a range of stakeholders including leaders, managers, process owners, and individual employees? The next section of this chapter describes how the best-practice organizations address the issue of accountability.

Make Stakeholders Explicitly Accountable for Contributing and Applying Knowledge

The best-practice organizations know that accountability drives behavior, and they hold leaders and representatives from the business accountable for the success or failure of knowledge transfer and reuse approaches (Figure 23). These are the people who actually own the knowledge, and it is vital for them to assume responsibility for applying it in ways that benefit the business. Although some organizations may enforce accountability by mandating knowledge capture and reuse, others encourage engagement simply by making participation valuable and compelling.

Looking at Figure 23, a surprising 46 percent of sponsors currently assign no accountability for the transfer and reuse of knowledge in their organizations. The remaining sponsors spread accountability among a range of stakeholders. This contrasts sharply with the best-practice organizations, who clearly consider their KM teams, project managers/process owners, and employees to be primarily accountable for knowledge transfer and reuse. In most of these organizations, the KM teams are accountable for the tools and approaches that support knowledge capture and transfer, whereas project managers, process owners, and employees are responsible for the actual identification, capture, transfer, and reuse of knowledge. The remainder of this section describes how three of the best-practice organizations use accountability to drive knowledge capture, transfer, and reuse.
Although Accenture has a dedicated team responsible for some aspects of content harvesting and management, the organization holds individual employees accountable for both sharing knowledge and actively managing the knowledge artifacts they contribute. A content owner dashboard features information on the number of contributions each employee has made and the tags assigned to those content items. Content owners can click directly to a content item from the dashboard or export results to assign tasks to a shared services team that handles transactional aspects of content management.

Accenture recently developed a mechanism to keep content contributors engaged in the content management process. Contributors will begin receiving quarterly reminders that outline the content they have submitted; its age and popularity; and actions they can take to review, update, or archive content.
At Kraft Foods, identifying the right owner for elicited knowledge is central to promoting its reuse. For example, the organization assigns a recipient for each knowledge book it develops. The recipient—an up-and-coming expert who will take ownership of the knowledge once the incumbent expert retires or leaves—is responsible for maintaining the book and updating it to reflect new developments and discoveries. He or she is also instrumental in socializing the knowledge book by uploading it to R&D Suite, sharing it at department meetings and workshops, and answering any questions that come up. Although knowledge book recipients usually focus on communicating within their own teams, they work with knowledge book champions (i.e., senior leaders who provide high-level support and help raise awareness for the completed knowledge books) to make sure that other R&D groups are aware of the books and the knowledge they contain.

At Wipro, project managers are held accountable for knowledge capture and reuse. Before closing out their projects, project managers must go through a mandatory, step-by-step process to ensure they have collected and documented all critical knowledge. A tool called e-Cube, which is part of Wipro’s quality management system, is used to capture and share project-related best practices.

In addition, Wipro uses a project performance analysis process to document success stories around knowledge application and reuse. Project managers undertake these analyses to show how their teams practice and apply KM in their daily work. The process measures KM adoption at a grassroots level and ensures that projects are moving in the right direction. Each project manager is responsible for keeping track of best practices and ensuring that relevant knowledge is published to Wipro’s knowledge base.

As this chapter and report details, knowledge capture and transfer efforts require certain resources (e.g., labor, funding, and technology) to be successful. It costs money to perform these activities, and KM investments must satisfy the same business case requirements as every other investment. The following section discusses how the best-practice organizations demonstrate the value of knowledge reuse.

Use Measures and Success Stories to Demonstrate the Value of Knowledge Reuse

As Chapter 1 states, the best-practice organizations focus their knowledge capture and transfer strategies on business continuity in support of strategic business goals. The KM teams at these organizations collaborate with their internal stakeholders and customers to understand their business goals; help them pinpoint their critical knowledge; and then support them as they capture, transfer, and apply that knowledge in an efficient and effective manner.

All that work involves an investment of resources from both groups, which sometimes requires justification. So how do these KM teams show that they are delivering value to
their stakeholders? They use a combination of measures and success stories to demonstrate value. For example, many of the partners capture activity metrics such as:

- the number or percentage of employees participating in knowledge capture, transfer, and reuse processes or activities;
- the frequency of knowledge capture activities (e.g., the number of structured interviews or lessons learned sessions); and
- the amount of knowledge captured (e.g., the number of best practices, lessons learned, or wiki articles).

The best-practice organizations also collect and publish compelling stories depicting the value delivered to the business from knowledge capture and transfer activities. These stories go beyond merely describing who, what, and where; they also describe how the outcome was achieved. By combining the success stories with the measures, the KM teams paint a persuasive picture of the impact of their knowledge capture/transfer activities.

Interestingly, 80 percent of the surveyed best-practice organizations measure the health and effectiveness of their knowledge capture, transfer, and reuse approaches, compared to less than 40 percent of sponsors. The low percentage of sponsor organizations actively measuring their approaches could reflect the lack of maturity of their knowledge capture/transfer strategies and approaches. Alternatively, it might reveal a level of trust among their stakeholders that they are delivering value so that no tangible demonstration in the form of metrics is required.

The rest of this section describes how four of the best-practice organizations measure the health and effectiveness of their knowledge capture and transfer approaches.

At Kraft Foods, the R&D KM team relies on surveys and success stories to communicate success related to technical reports and knowledge books. Several years ago, members of the KM team participated in a global road show to promote the Innovator’s Framework and engage researchers in KM. As part of the road show, the team presented success stories where R&D had leveraged existing knowledge to accelerate development timetables and save the organization money. Because of the power of this type of anecdotal evidence, the team has not invested in measuring knowledge reuse, time saved through reuse, or the return on investment.

Each of Lockheed Martin’s KM initiatives has its own measures to track health and business value. For knowledge continuity, the ultimate measure of success is whether the teams achieve their business goals. Programs and functions initiate knowledge continuity for many reasons; for example, they may need more deployable talent in a particular area to meet customer needs, or they may want to document a process or procedure before the senior expert retires. A project is classed as successful if those goals are met. Because of variations in how the business areas apply knowledge continuity and the metrics they
collect, the organization has not tried to roll the impact of the process into a uniform measure such as time saved. Instead, the Corporate Engineering and Technology group is happy to allow each business area to track the elements it finds most important and take credit for its own success.

For its communities of practice, Lockheed Martin placed more emphasis on measures when the program first launched. Individual communities still track and report certain data in order to show growth and progress, but the focus has shifted to anecdotal evidence about communities’ role and their impact on the business in terms of facilitating knowledge sharing across programs, developing the next generation of technical leaders, and enabling people to access experts and get answers. As more success stories filter up to senior leadership, there is less interest in quantitative metrics and more in qualitative evidence of business value.

In 2013, the U.S. Department of State’s knowledge leadership team conducted its third survey in 10 years to inquire about priorities, how people use IT to support the work of diplomacy, and how they use the knowledge-sharing tools and programs. The survey includes options for long-form responses so people can share comments and success stories with the team. In the most recent survey, the team asked people to provide examples of business cases, feature requests, and how they are using the programs and tools to collaborate with colleagues. Some of the responses were:

- “Corridor is perhaps the best learning tool I have come across.”
- On the Diplopedia wiki: “My boss keeps wondering how I know how to do all this stuff and do it so well. Don’t tell him.”
- “SearchState has helped enhance my work because I turn to it when I’m looking for information from another bureau or from a post.”

In order to ensure that its knowledge-sharing tools align with the strategic goals of the department, the knowledge leadership team uses a tool developed by APQC called the Measurement Alignment Worksheet. This tool helps the team trace connections from the State Department’s strategic plan to the bureau’s IT strategic plan to the mission of the Office of eDiplomacy to specific tools, such as Diplopedia and its Corridor social network platform (Figure 24). The team then creates project objectives, output performance measures, and outcome performance measures that tie directly back to departmental goals. According to the team, this is critical to get senior leadership buy-in and support.
Measuring Corridor’s Success at the U.S. Department of State

The State Department’s knowledge leadership team has strategic measures for each of the eight programs it administers as well as a few other programs. Analysis of the data from these measures, as well as from the surveys and analytics, highlights gaps in knowledge and content that need to be filled and identifies potential improvements desired by the end-users.

Wipro maintains a KM dashboard where it displays engagement and effectiveness indices used to gauge the success of its tools and approaches. The engagement index tracks how often the organization’s KM tools and approaches are used each month. This data reveals how Wipro’s business units and service lines leverage the knowledge and content available to them. The effectiveness index primarily monitors the business outcomes from projects. This includes content created, revenues, and feedback from customers and employees.

Wipro's KM team also uses a formula to look at the business value of KM. It measures employees’ KM usage and how that affects their effort deviation. For example, data was collected from 230 projects based on information in Wipro’s project management tool. The team has used this to see how KM affects productivity. The analysis shows that,
when KM is used by dispersed teams, these teams are able to deliver projects early or on
time more often than teams in a central location.

Along with effort deviation, Wipro measures productivity gains from two of its KM
products, the SHINE framework and the Known Error Database. SHINE is used to help
new hires when they are introduced to new accounts, and the Known Error Database is a
source of reusable client solutions. Before SHINE, teams were taking almost 30 hours to
perform certain tasks; whereas after SHINE, the teams reduced their cycle times down to
12 hours. Implementation of the Known Error Database resulted in similar gains, with
the average cycle time to resolve client issues decreasing from 112.5 hours to 89.8 hours.

Closing Comments

This chapter looks at tactics employed by the best-practice organizations to ensure that
critical knowledge is put into action to solve problems, improve productivity, shorten
cycle times, and improve the quality of work deliverables. The gains and success stories
reported by the partners are the natural culmination of complex processes in which
critical knowledge is identified and then either transferred from person to person or
captured and shared broadly through repositories and virtual tools. The methods and
outcomes vary depending on industry focus and organizational culture, but all the
partners boast knowledge capture, transfer, and reuse strategies that provide tangible
benefits both to employees and the organizations as a whole.
What We Learned: The KPMG Perspective

Traditional “knowledge management” has focused primarily on the capture and management of large content libraries. But times have changed. Knowledge is increasingly taking many different forms, has a shorter “shelf life,” and needs to be shared and learned more rapidly than ever before. This requires every organization to build strong capabilities that can help their people connect and collaborate with others quickly, both within and beyond formal teams. In many cases, collaboration is replacing what used to be enabled through content libraries.

This study’s best-practice organizations focus on different approaches in this area. Some emphasize codifying knowledge, with people and programs that formally identify, extract, document, and manage content. Others, however, put more focus on programs that enable their people to connect and collaborate, allowing the passing and capturing of knowledge to happen in a much more free-flow manner. Although all organizations recognize the importance of a knowledge sharing culture, there was (unsurprisingly) more emphasis on culture when taking the latter approach since it is crucial to it working effectively.

A common challenge for all the best-practice organizations is to identify their key experts and cultivate critical knowledge from them as part of everyday work. Be it through formal team knowledge capture sessions, targeting recognized high performers (e.g., the LM Fellows Network in Lockheed Martin), personal profile directories, or encouraging people to become virtual community leaders, much time and effort is spent on this problem with many different possible approaches. Aligning very closely with HR and learning groups is an imperative for success here.

It was interesting to observe the common role played by events or “triggers” to help “turbocharge” the building of structured knowledge management programs. These triggers—which include forced events (e.g., organization change, merger) as well as the recognition of an aging work force—can prompt senior business leadership to look to knowledge sharing programs as a business solution. We observed that several of the best-practice organizations used these as catalysts to drive larger ongoing business value.
Another observation was the varied approach to where knowledge management is placed in the organization. Some best-practice partners (Lockheed and Kraft) did not have centrally-led KM functions, and even those that did (Accenture, Wipro, State) took different approaches to where knowledge should sit. The insight is that what is most critical is having a clear strategy with committed business sponsorship for the knowledge program, as there isn’t a perfect “one size fits all” organizational approach.

The advent of SMAC (social, mobile, analytics and cloud) has also changed what knowledge is and how it can best be shared. Social collaboration is an investment area in some of the organizations (Accenture, State), but is not yet a pervasive capability everywhere. We still seem to be in the early stages of adoption among most enterprise organizations, but all believe that this will be an important future investment area. One challenge is that social collaboration brings much less governance and control than do traditional knowledge sharing programs, with people forming communities in an ad hoc (and in some cases chaotic) manner. Online communities are actually nothing new, as all of the best-practice organizations have mature community frameworks. However, social will disrupt traditional community models, and everyone will need to consider what changes are needed to get benefit from them.

It was interesting that the participants are still developing how they measure the success of their knowledge management programs through defined business-impact key performance indicators (KPIs). They have robust metrics that show how systems and content are being used (and how that then shapes content strategy). However, even the best-practice firms aren’t yet tying these back into quantified business impact for leadership. We recommend that APQC consider making this a focus of a future best-practices study.
About KPMG

KPMG is a global network of professional firms providing Audit, Tax, and Advisory services. We operate in 156 countries and have more than 152,000 people working in member firms around the world. KPMG LLP, the United States member firm of KPMG International, traces its origins back to 1897 and since 1994 has been a limited liability partnership registered in the state of Delaware. With more than 24,000 employees, including more than 1,700 partners, KPMG LLP is a leader among professional services firms. In the United States, we provide services from 90 offices covering clients in all 50 states. We are a significant presence in your current markets and in those locations where you may want to expand.

Our high-performing people mobilize around our clients, using our experience and insight to cut through complexity and deliver informed perspectives and clear methodologies that our clients and stakeholders value. Our client focus, commitment to excellence, global mind-set, and consistent delivery build trusted relationships that are at the core of our business and reputation.
Accenture

Accenture is a professional services organization focused on consulting, technology, and outsourcing services. It has four key work forces:

1. consulting (client-facing, high-value-added services);
2. services (outsourcing professionals);
3. solutions (technology-focused professionals); and
4. enterprise (infrastructure including finance, CIO, HR, marketing, facilities, and legal).

Accenture supports a range of industries, including communications and high technology, financial services, products, public service, and resources. The organization has 266,000 employees in 46 countries and reported more than $27.9 billion (USD) in revenue for 2012.

KM PROGRAM OVERVIEW

Accenture uses the term “social learning” to refer to its knowledge-sharing initiative. It chose this term to focus more on the initiative’s outcomes than on the management of knowledge itself. The social learning program encompasses the entire enterprise and is focused on both content and collaboration activities. Although enterprise-focused, the social learning team conducts regular end-user analysis studies to understand the social learning needs of various audiences and works with those audiences on tailored social learning solutions. The organization has a central knowledge repository (Knowledge Exchange), a central search capability for knowledge content, and a central learning management system, as well other systems that are used by all Accenture employees.

The mission of Accenture’s social learning program is to enable employees to learn from one another through collaboration and knowledge sharing in order to bring the best of Accenture to its clients. The social learning team aims to connect people within Accenture to the collective wisdom of the organization through documents, communities, ideation, and experts and to accomplish this outside the bounds of formal training. Figure 25 illustrates the mission of Accenture’s social learning program. The social learning team is located at the middle of an infinite loop that encompasses Accenture’s employees and its collective wisdom. The team acts as the “motor” to keep knowledge flowing through the loop.

Accenture’s social learning strategy has evolved over more than 20 years, developing from a position of simply managing knowledge to one where the focus is on promoting and embedding employee behaviors, attitudes, and approaches that cultivate a culture of habitual collaboration and knowledge sharing on a daily basis. The current strategy leverages many social learning tools and capabilities in which the organization has invested significantly in recent years.
In that time, Accenture’s social learning team has also developed significantly, to a point where it now oversees and implements many different facets of social collaboration. These include infrastructure development, strategy and enablement, the deployment of social learning catalysts, and learning knowledge management services.

**Accenture’s Social Learning Mission**

![Diagram showing the Accenture’s Social Learning Mission]

**We connect people to information and people - mobilizing the power of ‘One Global Network’**.

Figure 25

Ultimately, the team’s approach is focused on providing unencumbered access to the best content and expertise Accenture has to offer. It relies on a robust knowledge transfer/reuse strategy, optimal governance, adequate resourcing, strong leadership buy-in, integration with the employee life cycle, recognition and motivation, and ongoing marketing and communications activities to ensure that the importance and value of social learning remains top of mind for Accenture employees.

Accenture’s social learning processes focus on providing access to knowledge through content. Although the processes do not specifically emphasize experiential knowledge, content pieces serve as entry points to experts who can provide context and lessons learned around that content.
Developing a Strategy and Process to Protect Critical Knowledge

Because Accenture’s social learning program encompasses the entire organization, its strategy for capturing and disseminating knowledge focuses on increasing employee involvement through sponsorship and usability.

MOTIVATING FACTORS

Accenture developed its knowledge-sharing capabilities over a 20-year time period. In the 1990s the organization’s knowledge was decentralized, in that every group had its own Lotus Notes database. The organization then focused on building a structure for knowledge sharing, learning how to manage knowledge, and building communities. In the early 2000s Accenture focused on standardizing the global organization to actively manage knowledge. At that time it switched from its decentralized Lotus Notes database to a Microsoft approach and developed an expert locator.

Since 2010 Accenture has focused on adjusting behaviors to cultivate social learning. It has further developed technologies such as wikis and blogs that enable employees to engage in discussions around content. However, Accenture’s social learning program has faced challenges that spurred the team to create new initiatives so that knowledge sharing and KM can continue to provide benefit to the organization and its clients. These challenges include:

- a lack of consistent sponsorship, which has resulted in inefficient harvesting efforts;
- content that is “invisible” due to lack of harvesting;
- concerns about the confidentiality of shared content;
- perception by employees that knowledge sharing is extra work;
- the decreasing quality of shared content;
- a lack of content-focused resources to manage the content; and
- limited content quality reviews.

CAPTURE, TRANSFER, AND REUSE STRATEGY

Accenture’s social learning team is responsible for developing the organization’s strategy for collecting and managing content, fostering community among employees with regard to knowledge sharing, and connecting employees with internal expertise. The team also executes the established social learning processes and oversees the technologies that support the processes. In short, the team is responsible for taking Accenture’s social learning capabilities and applying them to solve business challenges.

Figure 26 depicts Accenture’s social learning vision. The organization has reduced the number of dedicated knowledge managers it employs, but to compensate for this,
business groups have taken more responsibility for communities of practice and their content. The organization has created repositories within communities to establish meaningful dialogue on key business challenges and has strengthened communities to take responsibility for content quality and maintaining a collaborative culture. This new focus includes involving the end-users of content to determine the best resources and identify items that need to be archived, refreshed, or cleansed.

**Social Learning Vision**

Accenture has also identified three areas of focus that will enable a robust social learning program. The first is the re-emphasis of a knowledge-sharing culture from the top. Accenture aims to accomplish this by strengthening the sponsorship of social learning activities and to increase the amount of expertise that the social learning team provides to business groups. The social learning team has launched awareness campaigns and training initiatives to help educate employees on how, where, and why they should use social learning capabilities. This includes Accenture’s gamification initiative and recognition programs for social learning.

The second area of focus for the social learning team is the improvement of content sharing. This involves simplifying the tools that reveal how content is being used and pinpoint aging content. The social learning team also aims to embed quality management processes into the social learning program. Finally, Accenture will embed social learning into employee performance management. The organization is rewriting employee
performance factors to include collaboration, and all employees will be evaluated on this factor.

The third area of focus is improvements to social learning technology. The social learning team will better integrate the organization’s collaboration tools and evaluate how it can improve its analytics. The team is also simplifying the user experience with these tools, improving search capabilities, and incorporating collaboration abilities into mobile applications. Finally, the team is aiming to pilot next-generation technologies such as cloud storage, text analytics, and new platforms for the organization’s content management system.

SOCIAL LEARNING GOVERNANCE

As part of its efforts to re-emphasize a knowledge sharing culture starting with business leadership, Accenture has established a social learning governance model (Figure 27).

**Social Learning Governance Model**

![Social Learning Governance Model](image)

The model specifies four roles:

1. **business leaders**, who are responsible for sponsoring social learning, prioritizing the objectives of the program, and ensuring that the initiative is heading in the right direction;
2. **business champions** (such as subject matter experts, collaboration champions, and project team champions), who are responsible for applying the capabilities to solve business problems;

3. **capability development groups**, which work with business leads to ensure that social learning strategies meet the skill and knowledge needs of the business; and

4. **social learning experts** (such as strategy leads, social learning catalysts, and administrators), who interact with Accenture’s business groups to implement content and collaboration.

Figure 28 shows the organizational chart for the social learning organization.

**Social Learning Organizational Chart (Fiscal Year 2014)**

The team consists of four groups that report to the director of social learning:

1. social learning infrastructure,
2. social learning strategy and enablement,
3. social learning catalysts, and
4. Accenture learning knowledge management services (ALKMS).
The social learning infrastructure group works with Accenture’s chief information office to develop and operate technologies and with the ALKMS group to manage transactional aspects of the stored content (e.g., taxonomy, scrubbing, posting, and reporting). The social learning strategy and enablement group provides overall strategy and enablement direction across Accenture; the group has also started to provide specific support to Accenture’s business groups and industries, with the possibility of future expansion. The social learning catalyst is a recently created position that focuses on driving a social learning program within a specific Accenture business. The number of social learning catalysts has grown from one to 15, with the position funded by the business groups.

The ALKMS group is a shared services team with more than 200 employees. A majority of these employees are located in India, but a small number of higher-level positions are located elsewhere. The responsibilities of this group include:

- content acquisition and maintenance,
- portal and web page maintenance,
- creating clickable graphics,
- communications management,
- maintenance of access control,
- learning management services that go beyond social learning (such as rapid e-learning services or other learning management services),
- acting as community moderators/administrators, and
- providing outsourced functions to Accenture clients.

SUCCESS FACTORS

Accenture has identified four success factors for its social learning program. The first is acquiring sponsors to actively communicate the value of content harvesting and reuse and promote social learning within the organization. The second is securing focused resources, which Accenture addressed in its governance model by identifying subject matter experts who can assess the quality of content and help package it for reuse. Social learning catalysts can help connect communities within Accenture to relevant content and drive content harvesting efforts within the communities. Accenture has also identified constant communication of the benefits of knowledge sharing and key harvested assets as integral to the success of its social learning program. It has discovered the effectiveness of both “carrots and sticks” in re-enforcing its knowledge sharing efforts; this includes rewarding teams with high participation rates while highlighting employees who have not taken advantage of available content or participated in harvesting.

To ensure that the four success factors are being addressed, Accenture has established key recommendations for improving the flow of content coming into the Knowledge Exchange system. The recommendations have the overarching goal of using the business groups to drive down social learning to Accenture employees. The social learning team will work closely with Accenture’s records management team to access project proposals,
which are among the most desired types of content. The team also seeks to simplify the content submission process by involving the end-users of content in the content refreshing and archiving process. In its work with the business groups, the social learning team will implement regular harvesting campaigns that focus on clients, rather than just on projects. It will also educate teams on collaboration and the knowledge-sharing tools available. Teams will be encouraged to incorporate content sharing into the final stages of projects.

**DRIVING CHANGE: PROMOTING THE STRATEGY AND GAINING BUY-IN**

Accenture has a program in place dedicated to change management—specifically, creating a culture of collaboration in order to drive high performance. The program takes a holistic approach by driving change through five key areas: leadership, the employee life cycle, recognition, enablement, and marketing and communications.

In the leadership area, one of Accenture’s key goals for the immediate future is increasing leadership engagement in the social learning program, starting from the very top and then driving down into business-unit leadership. Accenture is also doing more to improve involvement from the bottom up. The social learning team educates both new and tenured Accenture employees on the benefits of knowledge sharing. With about 70,000–80,000 new employees each year, Accenture considers it important to engage new employees in its culture throughout the career life cycle, including recruitment, onboarding, ongoing on-the-job support, and performance management.

The social learning team also focuses on driving intrinsic and extrinsic motivation to collaborate through its recognition program, which uses psychology and behavioral techniques such as gamification.

Finally, the team aims to drive awareness and understanding through education, marketing, and communications. In this space, the team has delivered engaging internal communications using techniques such as telestration videos (i.e., videos that include freehand sketches over moving or still images) and personalization.

**Defining and Documenting Critical Knowledge**

Accenture seeks to store critical information in its Knowledge Exchange system. The system includes four types of content:

1. **engagement profiles**, or internal write-ups of the types of work done with clients;
2. **proposals**, which are the presentations given to clients;
3. credentials, or formally approved, externally usable documents such as examples of work used in a proposal presentation; and

4. general documents, which include market insights, project deliverables, strategy materials, thought leadership, and training materials.

Content is not limited to documents in Microsoft Word and PowerPoint format; the category includes blogs, wikis, and online conversations as well.

Although Accenture seeks to store critical documents in Knowledge Exchange, not all of the organization’s content is housed there. Content is also located on Microsoft SharePoint sites, in a media repository, and in internal blogs. One challenge currently faced by the social learning team is that it can only create processes and capabilities that assist with content stored in Knowledge Exchange, not content stored in these separate repositories. Accenture is currently working on a vision to re-platform the Knowledge Exchange repository to enable other content sources to take advantage of its capabilities (e.g., taxonomy, reporting, and recommendation engine).

**APPROACHES TO IDENTIFY CRITICAL KNOWLEDGE**

Accenture has several approaches to identify critical knowledge for its Knowledge Exchange system. Ultimately, business leaders should be involved in confirming content gaps and identifying strategic engagements for harvesting, but there are many sources that can be used as inputs to discussions with leadership. The social learning team has a feed from the organization’s SAP system that enables it to identify projects and find opportunities for content harvesting. Team members also go into community sites to learn more about the content employees want and the best items to target for harvesting. In addition, content managers have access to content snapshots that provide overviews of the amount, use, and quality of the content for their respective areas; these snapshots can be used to identify gaps. Surveys with subject matter experts are another tool teams can use to identify content gaps.

**APPROACHES TO CAPTURE, TRANSFORM, AND SHARE CRITICAL KNOWLEDGE**

Accenture has developed a content management life cycle with four phases (Figure 29). The first phase involves identifying and harvesting content and getting it into Accenture’s Knowledge Exchange system. The second phase is content management, which can include tagging and sanitizing content to make it easier for employees to find and use. The third phase involves delivering content to employees and obtaining their feedback. The final phase is the archive process, when content is reviewed and eliminated if necessary.
Accenture has numerous ways to surface content to upload to its Knowledge Exchange system (Figure 30). These include:

- gaining sponsorship, which helps involve the business groups in the knowledge sharing process;
- identifying gaps and target engagements, which focuses harvesting efforts and enables the organization to develop new assets if no content is available to harvest;
- identifying reusable content such as engagement profiles, proposals, and project deliverables;
- accepting contributions and making it easy for employees to submit content;
- rewarding and recognizing employees for participating in knowledge sharing; and
- marketing content availability to employees via newsletters, activity streams, community site postings, discussions in town hall meetings, and other channels.
Accenture’s Content Harvesting Approach

Accenture’s social learning team has two methods of harvesting content to include in Knowledge Exchange: engagement harvesting and community harvesting. Engagement harvesting involves identifying the top engagements per month from which content should be harvested. The team specifically targets engagement profiles, proposals, sales materials, and project deliverables through this method. Currently, content harvesting is driven primarily by the ALKMS group, but in the future, Accenture plans to engage business leaders more aggressively in the upfront stages of the harvesting process to ensure the effort concentrates on strategically important, high-quality content.

Accenture’s community harvesting involves leveraging the power of communities within the organization to obtain key sales documents and other critical content. This type of harvesting is conducted one to two times per year to fill identified content gaps and can include “hard drive campaigns” that encourage employees to review their hard drives to identify valuable content. Community harvesting is driven by community champions and social learning catalysts.

SUBMISSION TOOLS

Content is also harvested through submissions by Accenture employees. Accenture does not have a gatekeeper approach to content submissions; any employee can submit...
content to the Knowledge Exchange system, and all submissions are immediately available.

The social learning team is debuting new, easier processes for submitting content designed to incorporate content sharing into daily work activities. For example, the team is simplifying the existing content submission form in the Knowledge Exchange system to make it more flexible. In addition, employees now have the ability to submit content via email attachment. Users specify the title of the submission in the subject line and include descriptive information in the email body. Submissions are received through a shared email address and automatically added to the system. The ALKMS group then tags and reviews the content submissions, manually adding any further details needed to ensure findability. The ALKMS group contacts the user for more information if necessary.

The social learning team has also created a desktop tool for submitting content. Employees can download the tool to their computers to access a form with minimal required fields for a content submission. Users then upload the content item and submit it through the software in the same process used for tagging via ALKMS. The desktop tool also allows users to access the software by right-clicking the individual file they want to submit.

Content can also be submitted through Accenture’s Microsoft SharePoint sites. Site owners can elect to install a content-sharing feature that allows users to right-click any document stored on that site for an option to submit the file to the Knowledge Exchange system. Selecting this option brings up the same submission form as the desktop application.

QUALITY AND TAXONOMY

Accenture’s ALKMS group is responsible for reviewing submitted content and assigning tags for individual items. This group does not necessarily have the knowledge to determine the quality of submissions, but it can identify the group largely associated with a submission and identify a subject matter expert who is more capable of assessing a submission’s quality. The ALKMS group is also working to develop more subject matter expertise so that quality assessments can be conducted within the group. Within some business units, Accenture has begun conducting monthly reviews of submitted content to ensure that it is being tagged properly.

In 2005, when the organization transitioned from using Lotus Notes to SharePoint for document storage, Accenture reviewed its taxonomy and conducted a rationalization effort to reassess which fields and values were necessary. It established a monthly process during which new keywords are submitted. A governance team reviews all submissions and implements the suggestions upon approval.
Managing Access to Critical Knowledge

Numerous groups are responsible for managing knowledge at Accenture, and the organization has multiple ways of pushing content to users. In addition, the social learning team is continually creating enhancements to existing knowledge dissemination tools to drive engagement.

RESPONSIBILITY FOR MANAGING CRITICAL KNOWLEDGE

Responsibilities for managing knowledge within Accenture vary depending on an employee’s title and location. For example, the ALKMS group processes contributions made by individual employees. This team processes about 18,000 to 20,000 submissions to the Knowledge Exchange system per year. Because each submission may include multiple documents, the team processes about 60,000 to 70,000 documents annually.

Figure 31 details the ALKMS organization structure. The primary customers of the ALKMS group are Accenture’s functional areas. Each of these areas has an ALKMS content integrator who works to understand the area, develops functional expertise for the area, and translates the area’s needs into services provided by the ALKMS group. The group is organized into small, service-area teams that specialize in particular services. Although the broader ALKMS group used to be organized into subgroups that provided all services to assigned customers, it now has a more transactional organization in which teams provide services across all customer groups.

Accenture’s content managers are tasked with evaluating and maintaining the organization’s content. The organization recently adopted a content owner dashboard featuring tabs with data on the number of contributions; the age, expiration date, and downloads for each item; and the tags assigned to each item. Content owners can click directly to a content item from the dashboard or export results to offload tasks to the ALKMS team. They can also archive content directly through the dashboard.

Accenture has implemented a semi-automated quarterly archiving process that looks at the age of content as well as the number of downloads. Flagged content is put into archive status based on predefined criteria and then deleted after one year in archived status.

Accenture recently developed a mechanism for keeping content contributors engaged in the content management process. Contributors will begin receiving quarterly reminders that outline the content they have submitted; its age and popularity; and actions they can take to review, update, or archive content.
TOOLS USED TO FIND RELEVANT CONTENT

Accenture has recently focused on making it easier for users to find and use content. Techniques include personalizing search results for users, getting users to interact more with communities to share expertise, using analytics to identify potential content of interest, and improving mobile access to content.

Knowledge Exchange System

A first step to improve access to relevant content involved modifications to the Knowledge Exchange system. The organization recently redesigned the system’s home page to include an activity stream in a prominent area, an improved search, a customized section with the user’s contributions and recommended content, and easy access to Accenture’s communities of practice.

Accenture has recently focused on incorporating activity streams into its social learning tools. The activity streams used by Accenture are similar to the streams users see in Facebook. When an employee submits content to Knowledge Exchange or comments on a content item, the relevant activity streams are updated. Employees viewing the activity streams are then directed to new content or to the internal experts who created that
content, who can provide additional contextual knowledge on the topic or material. Users can also leverage the activity streams to share relevant knowledge, either through a focused community harvesting hard-drive campaign or on an ad hoc basis.

The social learning team has also improved Accenture’s content search capability, driving the percentage of search “thumbs up,” or good searches, from 33 percent to 60 percent overall. The organization has expanded filter options for search results and built in feedback capabilities so users can rate their search results. In addition, the social learning team is working to improve the taxonomy tags for content and ensure that fresh content is being added to Knowledge Exchange. Accenture has a search center of excellence that invests in search capabilities and educates employees on the proper maintenance of content and correct tagging to ensure quality search results.

To supplement these search improvements, Accenture is leveraging analytics to anticipate user needs. When a user conducts a search for content, the Knowledge Exchange system directs him/her to other content that may be of interest. Similarly, when a user views a piece of content, he/she can see what others have downloaded in addition to that content item. The portal also provides users with recommendations on communities related to specific content items.

**Community Sites**

Activity streams are also present on Accenture’s community sites (Figure 32). These streams provide relevant updates from the community and allow community members to contribute content, post questions, and connect to colleagues with needed expertise and content. Community sites also include static elements such as links to other pages with information relevant to a particular community. Each site has a tab with a search function that is unique to the community. When a member of the community conducts a search through this function, the search favors content from within the community to increase the likelihood of relevant results.

Accenture provides templates and guidelines for the creation of community sites within the Knowledge Exchange system. The templates vary depending on the purpose of the site; the layouts for social community site pages look different from those created for business groups or service offerings. New community sites must be requested and approved before they become active. The social learning team creates the initial structure of each site, but the community owners assume control and can make changes and updates over time if needed. The use of community sites is monitored, and if a site is not being actively used, then the social learning team will recommend that it be retired.

Community sites are housed and structured in Microsoft SharePoint 2010. The activity stream used in the Knowledge Exchange system is a custom-built capability that is integrated with Yammer. The search engine function within Knowledge Exchange will soon move to Microsoft SharePoint 2013.
Example Community of Practice Site

Figure 32

Mobile Accessibility
Accenture’s social learning team has also taken steps to make its knowledge sharing tools accessible through mobile devices. Employees can connect with experts and view Accenture people pages through mobile platforms. They also have access to activity streams, Accenture’s expertise location system, the Knowledge Exchange search tool, and an offerings navigator. Individual business groups within Accenture have developed their own applications to provide employees with access to business content, but this has resulted in different platforms and approaches among groups.

Ultimately, the social learning team would like to expand its mobile capabilities to enable employees to access selling materials and Accenture expertise whenever needed. The social learning team also aims to improve employee interaction by making communities of practice easily accessible via mobile devices. The overarching goal for Accenture’s mobile capabilities in the knowledge sharing space is to enable users to move seamlessly from desktop to mobile and back again as needed.

UPCOMING ENHANCEMENTS
Accenture is in the early phases of redesigning its content management capabilities. Goals include simplifying content collection and management; engaging end-users in managing
content; and adding the ability to apply taxonomy, metrics, recommendations, ratings, and other capabilities to multiple repositories (e.g., documents, blogs, and videos).

The first phase of the redesign is the ability to share and organize links and documents via the activity stream capability. Any links or documents added to Knowledge Exchange will be accessible from online sites, employee desktops, and mobile devices. Employees will be able to access and comment on stored links to content, as well as to tag links using the Knowledge Exchange taxonomy. Accenture will be able to track the use of content back to the stored links in order to recommend content based on its usage statistics. Access control for internal documents will be retained in this system to ensure protection of sensitive documents.

PROTECTING CONFIDENTIAL INFORMATION

Accenture has established document usage restrictions for content. All employees receive training on how to determine the confidentiality level of documents. As such, the social learning program does not necessarily specify the acceptable use of specific content items.

Managing Change Related to Knowledge Capture, Transfer, and Reuse

Accenture has identified desired behaviors related to social learning. To encourage employees to demonstrate these behaviors, the social learning team has adopted a holistic approach to managing change and embedding a culture of collaboration.

ENCOURAGING KNOWLEDGE SHARING AND REUSE

Accenture’s research demonstrates that social learning drives high performance and that high performers engage more in social learning and knowledge sharing than their peers do. The data also indicates that the greatest barriers for employees to engage in social learning activities are perceived lack of time, perceived lack of incentives, lack of awareness of social learning tools, and insufficient understanding about how to use the tools that are available.

Accenture has initiated a program to enable cultural change and drive participation in social learning. The program aims to ensure that employees:

- demonstrate behaviors that signal engagement in the social learning program,
- understand why social learning is critical to Accenture’s success,
- are aware of and understand how to use Accenture’s social learning capabilities,
- feel motivated by leadership to engage in social learning activities,
- understand how engagement in social learning impacts others, and
- experience professional growth through social learning participation.
The social learning team takes a holistic and comprehensive approach to achieving the program’s goals, which are built around the following five key drivers (Figure 33):

1. **leadership**—ensuring that the most senior leadership stresses the importance of social learning and demonstrates desired behaviors while the remaining leadership levels help drive behavior change down into the organization;
2. **employee life cycle**—engaging employees in social learning throughout their careers, from recruiting to onboarding to performance management;
3. **recognition**—motivating employees to participate through leadership support, the performance management process, and a gamification program;
4. **enablement**—ensuring that employees understand why they should collaborate, what resources are available, and how to collaborate effectively; and
5. **marketing and communication**—using existing communication channels (as well as channels unique to the business groups) to raise awareness of social learning among employees and drive the agenda for the other four key drivers.

**ENABLEMENT**

Diving into specific areas of the program, the social learning team developed enablers that help employees be more involved in the knowledge-sharing process. Its one.accenture.com site helps individuals get started with collaboration. The team also created a series of short, high-quality videos that seek to educate employees on the value of collaboration and the basic steps to get started. Sample topics include building your network and finding relevant content. In addition, the team offers self-paced training modules to learn more about collaboration. These modules are 30 minutes to one hour in length. Live, one-hour training sessions are also offered virtually and in-person at Accenture’s central training facility for employees who prefer this method. Finally, the team promotes ongoing collaboration through its work with communities of practice and its gamification program.

**MARKETING AND COMMUNICATION**

The social learning team seeks to engage employees in social learning from the time of hire. Its telestration videos communicate to new employees why social learning is relevant to them and important to Accenture. These videos focus on the three core behaviors of knowledge sharing: connect, contribute, and champion. The videos are publically accessible on YouTube (search Accenture social learning).

For existing employees, the team creates high-level communications that are aligned with business strategy that move through existing communication channels. The team also
enables individual communities and business groups to develop custom communications based on their needs.

The social learning team also sends targeted communications directly to individuals. The team uses analytics to understand employee behavior so that it can create messages that are customized and relevant to each audience. These campaigns use a variety of channels, including postcard mailings and marketing videos. The campaigns are visual and creative to engage the recipient. They have been hugely successful, driving much higher click-through rates than standard Accenture communications, and have been emulated by other groups within Accenture.

**Key Drivers to Establish a Culture of Knowledge Sharing**

![Figure 33](image)

**RECOGNITION AND MOTIVATION FOR PARTICIPATION**

Accenture uses gamification to motivate employees to participate in social learning and influence their behaviors. For more information on Accenture's gamification program, see [Connecting, Contributing, and Cultivating with Gamification: An APQC Case Study](#).

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6 For more information on Accenture's gamification program, see Connecting, Contributing, and Cultivating with Gamification: An APQC Case Study.
progression loops, feedback, visualization, and status are applied to encourage employees to collaborate. Data from gamification feeds into Accenture’s Addo Agnitio Award recognition program, which has been in place since 2006.

Every employee receives a score that measures his or her collaborative behaviors. The score is based on more than 30 metrics tied to the three key behaviors: connect, contribute, and champion. Scoring is weighted toward quality, rather than quantity. For example, an employee who writes a blog is rewarded based on the number of views and downloads his/her posts receive, not merely the number of posts he/she writes. Employees can access a portal for the awards program to track their collaboration activities and determine their scores (Figure 34).

Scores are reviewed quarterly, and top collaborators are awarded a gold or silver star. These employees receive a recognition letter from leadership as well as a small monetary award based on the number of points they have earned. The employees also receive...
badges to display on their internal profiles and have their awards noted in their annual performance reviews.

The program has run manually since its inception in 2007, at which time gamification technology was still nascent. The team is in the process of implementing new technology that will automate the program and provide real-time feedback to participants. As part of this implementation, the gamification design will be upgraded to include additional behaviors and incorporate the latest advances in gamification theory. The team also aims to offer more transparency into how scores are calculated and provide users with fixed score targets.

Another enhancement involves expanding recognition for participants. Currently the top 5 percent to 8 percent of users are recognized, but the new program will be geared toward recognizing a much larger contingent. The team is also expanding motivators to include mastery in a particular area, such as blogging. This will further encourage participation because it will allow employees to choose how they engage in social learning.

**Ensuring Knowledge Is Applied and Used**

Accenture has adopted measures to evaluate whether employees are participating in the social learning program. Performance on these measures is used to evaluate social learning tools and to gauge the need for additional engagement efforts.

**STEPS TO ENSURE REUSE**

Accenture provides employees with the ability to rate content, which provides input on the types of content and topics that generate the most interest. This also allows the social learning team to better assess which content items are used most and least frequently. The team flags content with lower ratings for review. However, expanding content ratings among employees is an opportunity for Accenture. Plans include leveraging the power of communities to generate more content ratings via crowdsourcing activities.

**MEASURES/INDICATORS FOR STRATEGY**

The social learning team is responsible for metrics used to evaluate the performance of the social learning program, with the ALKMS group supporting efforts to capture and report the necessary data. This group also collects qualitative feedback from both seasoned users and non-users. The team conducts pulse surveys on the utility of the content and collaboration tools and on employee participation in communities. Surveys are administered every six months to assess the performance of new programs and correlate investment with benefits. The social learning team is also rolling out new reporting capabilities. With these new capabilities, it will have better visibility into the number of “likes” a piece of content has and the number of times it has been shared.
Accenture has a social learning scorecard that is presented quarterly to business leaders to show how employees participate in social learning. The scorecard provides leadership with information on whether employees are:

- joining communities,
- subscribing to email digests,
- using the search functions within community sites to find content,
- contributing to blogs,
- using the activity stream to interact with their peers,
- updating their internal profiles, and
- downloading and contributing content.

The scorecard enables leaders to look for groups that stand out with regard to social learning participation. This can help both executives and the social learning team understand which program features are successful and identify effective practices that can be applied to other areas of the organization. Scorecard results can also lead to additional engagement efforts.

Accenture has a separate monthly scorecard for the engagement harvesting process. Business groups enter all their target projects onto the scorecard so the social learning team can track the progress of businesses content harvesting efforts. The scorecard tracks:

- response completion rates (i.e., number of responses to requests for content);
- no response rates (i.e., projects that have not replied to the business team’s request for materials);
- the amount of content that is not requested (i.e., when business teams do not ask for specific materials such as the proposal or project deliverables);
- backlog; and
- effort.

The social learning team has also developed a content management scorecard specifically for Accenture’s management consulting practice. This quarterly scorecard was the inspiration for the new content owner dashboard. The scorecard allows content owners to evaluate how well they are meeting targets and gives them detailed information on harvesting, the number of content items, the age of content, how content is tagged, and the number of downloads. This allows the owners to take any needed action and compare current performance to past performance.
Critical Success Factors and Lessons Learned

Through the creation and continuing development of Accenture’s social learning program, the social learning team has learned that a knowledge sharing program requires strong sponsorship and people who know the content in order to drive improvements to content collection and quality. It is not enough for leaders to recognize the importance of knowledge sharing; they must actively participate in order to drive change across the organization.

The social learning team has also recognized the importance of focusing content harvesting efforts on known content gaps. This requires commitment up-front from business group leadership, but harvesting efforts can be made easier through automation. The team has also learned the value of making content access seamless for users in order to encourage engagement.

Additionally, the social learning team acknowledged the importance of content maintenance. Maintenance can be accelerated by involving end-users and making the updating and archiving processes user-friendly.

NEXT STEPS

Accenture’s social learning program will continue to evolve to encourage maximum participation from employees. The social learning team will continue to seek sponsorship from organizational leaders and look for content that has not been submitted to Knowledge Exchange. It also aims to find new ways to harvest high-value content.

The ideal state for the social learning program is to provide users with access to valuable content through a variety of devices. The team also seeks to enable users to tag any piece of content, either internal or external, and have that content be available to others. Another goal is to enable conversations to occur among the creators and consumers of content so that the organization can benefit from contextual knowledge related to its content. By encouraging engagement in the knowledge-sharing process and adapting technologies to better meet user needs, Accenture’s social learning program enables employees to connect with each other and, ultimately, bring the best of Accenture to its clients.
Kraft Foods Group Inc.

Kraft Foods Group Inc. is a North American grocery manufacturer supplying a range of beverages, cheeses, dairy products, snacks, and convenience food. It was founded in 1903, but many of its composite brands predate it, the earliest being Grey Poupon mustard launched in 1777. Other well-known brands under the Kraft umbrella include Jell-O, Maxwell House, Oscar Mayer, Philadelphia, Velveeta, Planters, Kool-Aid, and Miracle Whip.

In 2012, Kraft Foods Group Inc. split from Kraft Foods Inc., which became a global snack and confectionary company called Mondelēz International. The new Kraft Foods is approximately one-third of its size before the spinoff, but its products can still be found in 98 percent of U.S. households and 99 percent of Canadian households. It reported more than $18 billion (USD) in net revenue in 2012 and employs 23,000 people across North America. The organization is headquartered in Northfield, Ill.

KM PROGRAM OVERVIEW

This case study focuses on Kraft’s R&D function, which comprises approximately 750–800 employees embedded in seven reporting business units. As shown in Figure 35, a central research, development, quality, and innovation (RDQ&I) function supports R&D in the business units, and all R&D employees have a dotted-line reporting relationship to the RDQ&I executive vice president. Knowledge management (KM) is grouped with intellectual property and training under RDQ&I. As associate director of intellectual property, KM, and training, Nanako Mura leads the KM program along with Kraft’s intellectual property and training initiatives.

The KM team functions as a center of excellence for KM and knowledge transfer. As such, it:

- provides access to internal and external knowledge as well as technical training that employees need for their projects;
- selects and manages tools/approaches for knowledge capture and documentation;
- partners with Kraft’s information systems group to deliver KM and collaboration technologies;
- provides subject matter expertise for certain business processes and offers research-related services (such as technical landscape searches) for select priority projects;
- maintains subscriptions to publications, journals, and licensed research tools for Kraft’s RDQ&I function in order to avoid duplication across the business units;
- operates three physical reference libraries at Kraft R&D facilities; and
- identifies and promotes best practices related to the management and flow of knowledge.
The KM, intellectual property, and training team consists of three full-time equivalent (FTE) employees along with contract staff who work in the physical libraries. The team collaborates with other KM teams across Kraft, but these groups are not linked under a comprehensive corporate initiative.

**Research, Development, Quality and Innovation Organization**

![Diagram of Research, Development, Quality and Innovation Organization]

**Developing a Strategy and Process to Protect Critical Knowledge**

Kraft Foods RDQ&I has had a KM strategy in place since the mid 2000s. The program was initiated by a passionate vice president of corporate research who emphasized the importance “knowing what we know,” defined as capturing and transferring knowledge in order to increase efficiency, improve decision making, and avoid unnecessary reinvention.

Mura explained that, in the food industry, “a lot of the things we create are some iteration of something that was created before.” Therefore, an understanding of past projects, designs, and experiments can significantly increase the pace of invention and
development. In addition, the organization has a large population of experts and senior staff who have worked for Kraft for 20 or 30 years. KM plays an important role in ensuring that their expertise is leveraged across the organization and retained when they retire or leave.

OVERVIEW OF CAPTURE, TRANSFER AND RESUSE STRATEGY
Since 2009, Kraft RDQ&I has pursued a consistent strategy and set of objectives for KM. The strategy focuses on four process areas:

1. **expertise management**—connecting to and leveraging internal experts;
2. **documentation and content management**—capturing, organizing, transferring, and archiving information;
3. **collaboration and social networks**—helping employees network across regional and business unit boundaries to harness the organization’s collective knowledge; and
4. **tacit knowledge capture**—documenting and transferring experiential knowledge.

According to Mura, the strategy directly supports Kraft’s overall mission, which is to make Kraft the dominant North American food and beverage company by investing in people, executing with excellence, and increasing efficiency (Figure 36). If the organization delivers on the four process areas of its KM strategy, then people will have improved technical capability, be more technically diligent, and be better prepared to make strategic decisions. The R&D team will also be able to onboard new employees more quickly and avoid costly reinvention.

Underpinning the four process areas are a technology infrastructure and a change management effort to secure engagement and participation. Mura said that, because of the spinoff, the KM team has emphasized the documentation, content management, and tacit knowledge capture elements of the KM strategy since 2012.

**Linking KM to Kraft’s Mission**

- Make Our People Our Competitive Edge
- Execute with Excellence
- Turbocharge Our Iconic Brands
- Redefine Efficiency

**Improved technical capability, better decision making, avoidance of reinvention and faster onboarding**

**Figure 36**
IMPACT OF THE SPINOFF ON THE KM STRATEGY

Although Kraft RDQ&I’s KM strategy predates the spinoff, knowledge capture and transfer activities were naturally accelerated during the separation. Due to the spinoff, the R&D functions of some businesses were relocated, resulting in a risk of losing long-tenured employees who did not want to move. The restructuring also led to internal movements and attrition, with positions disappearing and changing enterprise-wide. “We knew we were losing a lot of expertise, so there was an even greater call to action in the area of knowledge,” Mura said.

In addition, following the spinoff, the resulting organizations would be required to operate as wholly independent entities and could not collaborate except in very narrow, predefined cases. The new Kraft Foods and Mondelēz International have a number of business lines in common, including cheese and dairy, coffee, and powdered beverages. In these areas, it was critical to ensure that each newly formed company had the knowledge it needed to maintain operations and be competitive. Any information or expertise that was historically shared between the two entities needed to be reproduced and made available in both.

Kraft’s CEO and senior leadership team provided strong support for KM efforts associated with the spinoff and communicated the importance of capturing and transferring knowledge in all areas of the business. However, duplication of knowledge was particularly critical for R&D because technology and knowledge can be more easily applied across businesses, brands, and regions.

Defining and Documenting Critical Knowledge

Kraft RDQ&I designed a rigorous knowledge capture and transfer process to prepare for the spinoff. As part of this process, it:

- established a governance team to guide the effort,
- identified critical knowledge at risk and the experts who possessed that knowledge,
- outlined work plans for the type of knowledge capture/transfer that would occur, and
- executed the work plans while tracking and reporting progress.

The first step was to assemble a governance team with the right mix of KM, HR, IT, and communications skills. Once that team was in place, it provided the business units with a range of options to transfer and duplicate knowledge. For example, some business units leveraged short-term assignments where employees from one location spent time at another location mentoring and teaching colleagues about their areas of expertise. Other businesses focused on written documentation and asked their experts to write and publish technical reports on key topics. The governance team offered guidance on knowledge capture and transfer methods, but was not overly prescriptive since each business unit has its own ways of storing and accessing knowledge. However the business
units chose to transfer knowledge, they had to track and report on their activities, which created accountability and helped ensure success.

Now that the spinoff has occurred, the KM team is committed to maintaining the momentum that it built in 2012 and continuing to work with the business units to identify, capture, and transfer knowledge. The remainder of this section outlines Kraft’s processes to pinpoint at-risk critical knowledge both during and after the spinoff; it also describes some of Kraft’s key tools and approaches for capturing and documenting tacit knowledge.

IDENTIFYING CRITICAL KNOWLEDGE IN ANTICIPATION OF THE 2012 SPINOFF

When Kraft began capturing and transferring knowledge in anticipation of the 2012 spinoff, the KM team knew it needed to prioritize the topic areas on which it would focus. Senior leaders in the business units were ultimately responsible for identifying their critical, at-risk knowledge since they had the most insight into business strategies, operations, and needs. However, the KM team provided high-level guidance by encouraging the business units to target knowledge that was:

- **mission critical**—needed to support current and future business strategies;
- **a core competency**—driving a competitive advantage and/or supporting an area where Kraft is an industry leader;
- **not readily accessible**—undocumented or insufficiently documented;
- **rare or unique**—limited to one or two internal experts and not available externally; and
- **stabilized**—not likely to evolve significantly, become obsolete, or be replaced.

The team found that the most important knowledge to capture resided in the overlapping business lines where both Kraft and Mondelēz would retain a foothold after the spinoff, along with certain corporate knowledge domains.

IDENTIFYING CRITICAL KNOWLEDGE TO SUPPORT ONGOING OPERATIONS

At the beginning of 2013, the new Kraft Foods decided that it wanted to adopt a systematic approach to identifying at-risk knowledge so that it would be prepared for the pending retirement of senior experts, as well as any future restructuring or business change that might occur. To this end, it adopted the Method for Analyzing and Structuring Knowledge (MASK) II, which was developed by Jean-Louis Ermine while working for the CEA (French Atomic Energy Commission). MASK II provides a structured approach to analyze which fields of knowledge are most critical and at risk, prioritize them, and match them with appropriate knowledge retention and transfer methods.
Like the process to identify critical knowledge prior to the Mondelēz International spinoff, the first step involved engaging business unit vice presidents. These individuals have a comprehensive understanding of what goes on in their businesses, including which senior people might be nearing retirement or at risk of leaving, the areas where the most unique knowledge resides, and technologies that are critical but have never been formally documented. Combining the recommendations from the vice presidents, the KM team assembled a list of 12 or 13 fields of knowledge that the businesses felt would be appropriate targets for knowledge retention and transfer.

The next step was to prioritize the needs of the business units against the available resources and knowledge transfer techniques. With limited resources, the KM team knew it could not address all the fields of knowledge simultaneously, and it wanted to ensure that it started with the most critical and time-sensitive topics.

The team began its prioritization process by conducting 30-minute interviews with two technical experts and one manager for each field of knowledge under consideration. According to Jeni Wolf, an associate principal scientist for KM, this was to ensure that the team got both a technical and a strategic perspective on each field. Each interviewee was asked to score his/her field of knowledge against 11 questions focused on the rarity of the knowledge, its strategic breadth, the difficulty of acquiring the knowledge, and the difficulty of applying the knowledge once acquired. Descriptions of the 11 questions follow.

**Rarity**

1. **Number and availability of knowledge holders**—Kraft wants to focus capture and transfer on areas where only one or two people currently possess the knowledge.
2. **Availability of knowledge outside Kraft**—If the organization can easily replace the knowledge by hiring, then it may not be a prime candidate for capture.
3. **Are we a leader in this field**—The organization prioritizes knowledge related to areas where it leads the industry in order to ensure it maintains its dominant position.

**Strength Breadth**

4. **Alignment with mission and goals**—Priority is given to knowledge that directly supports the organization’s strategic objectives.
5. **Emergence of the field**—Kraft wants to focus on fields that are growing, not ones that might be contracting or becoming obsolete.
6. **Adaptability of the field**—The organization considers it more important to capture knowledge that can be applied across different products and areas of the business.
**Difficulty to Acquire**

7. **Difficulty of identifying sources for the knowledge**—Fields where it is difficult to find sources are prime candidates for knowledge capture and transfer.

8. **Role of networks**—Priority is given to fields where developing expertise requires an extensive network and such networks are difficult to build and maintain.

**Difficulty to Apply**

9. **Depth of the knowledge**—Fields that require a greater depth of expertise to successfully apply the knowledge should be favored for knowledge capture and transfer.

10. **History of the field**—If experts need a comprehensive understanding of the history of the field in order to be able to apply the knowledge, then that is taken into account.

11. **Role of external factors**—Fields where experts must understand government regulations or monitor the activities of other companies are also given priority.

The KM team did not share the questions with the interviewees ahead of time because it wanted to get their initial, off-the-cuff reactions. Interviewees were asked to score each question on a four-point scale, where 4 indicated the highest level of rarity, usefulness, difficulty of acquisition, or difficulty of application. The KM team provided definitions to guide people in scoring each question. For example, in relation to the number and availability of knowledge holders, a score of 4 meant that the knowledge was held by only one expert who had limited availability or had already left Kraft, whereas a score of 1 indicated that the knowledge was universally held by everyone or almost everyone working in that area.

For questions related to rarity and strategic breadth, interviewees were asked to base their scores on both present and projected future state. The KM team encouraged the experts to analyze where their fields would be in five or 10 years and whether the knowledge would still be rare/useful at the end of that timeframe. “If something is very important today and very likely to be important in the future, then that elevates its importance for us,” Wolf said.

In addition to the scores, the interviews generated a lot of commentary. The KM team reported that the commentary was almost more valuable than the actual scoring because it added context and depth to the scores and helped the KM team understand the experts’ perspectives. Mura said that making the scoring part of a broader conversation was a critical success factor. “Don’t just send out a survey because people interpret it in their own way,” she said.
By having experts provide their scores as part of the interviews, the KM team was able to capture the reasoning behind the scores and, where appropriate, steer the experts toward slightly different scores based on their comments. The commentary also ensured consistent scoring across experts and knowledge areas and helped the team understand why a particular field of knowledge was important, which fed into its final recommendations.

After conducting the interviews, the KM team compiled the scores and commentary into an Excel workbook used to analyze and prioritize the potential projects. The team combined the experts’ scores for each question and then added the scores for all the questions in a particular category to acquire a composite score for rarity, strategic breadth, difficulty of acquisition, and difficulty of application (Figure 37). It then created bar charts based on the data to uncover themes and pinpoint the most critical knowledge (Figure 38). The process also enabled the organization to identify topic areas that applied to more than one field of knowledge.

At the culmination of the process, the KM team used the data to form recommendations that were shared with the business units. Around this time Kraft announced it was offering early retirement, which caused the team to shift some of its priorities toward capturing expertise that was about to walk out the door. Mura and Wolf said that prioritizing critical at-risk knowledge for capture is a balancing act among importance, urgency, and other factors. The team ultimately selected six fields of knowledge to tackle immediately, with the intention to circle back and address the additional fields at a later date.

In addition to helping the KM team prioritize fields of knowledge to be captured and transferred, the interviews led the team to other experts and knowledgeable people in the respective areas. Often, when a KM team member talked to an expert about his/her field of knowledge, the expert would recommend additional experts or people with applicable experience in the same or related fields. The team used this information to build a network of people to consult as part of the actual knowledge capture and transfer process when it occurred.

As an added bonus, the process of identifying critical at-risk knowledge drove the business units to look at their knowledge needs more strategically and think about ways to preserve and proliferate knowledge beyond the formal KM activities. For example, some managers opted to introduce informal mentoring between experts nearing retirement and mid-career employees working to build their knowledge. In this way, the businesses were able to provide solutions for a broader set of knowledge domains than could be prioritized as part of the official capture and transfer effort.
Analyzing the Scores for Each Field of Knowledge

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Meat</th>
<th>Beverages</th>
<th>Dairy</th>
<th>Quality</th>
<th>Snacks</th>
<th>Packaging</th>
<th>Meals</th>
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<td>Planning</td>
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<td>Impacts</td>
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</tr>
</tbody>
</table>
| Number and Availability of K
t knowledge Holders               | 5    | 5         | 7     | 6       | 4      | 6         | 7.5   |
| Availability of Knowledge      | 5    | 4         | 3     | 4       | 4.5    | 6         | 6     |
| Outside of K
t                 |      |           |       |         |        |           |       |
| Leadership**                    | 3    | 4         | 2     | 4       | 4      | 3         | 3     |
| **Total                         | 15   | 13        | 12    | 14      | 13.5   | 15        | 16.5  |
| Strategic/ Breadth of the       |      |           |       |         |        |           |       |
| Knowledge                       |      |           |       |         |        |           |       |
| Alignment with K
t Mission and Goals** | 3    | 4         | 4     | 4       | 4      | 4         | 4     |
| Emergence                       | 5    | 6         | 7     | 8       | 5      | 6         | 3     |
| Adaptability                    | 4    | 5         | 6     | 5       | 5      | 8         | 3.5   |
| **Total                         | 12   | 15        | 17    | 17      | 14     | 10        | 9.5   |
| Difficulty of identifying       | 5    | 4         | 6     | 5       | 6      | 4         | 7     |
| sources for the knowledge       |      |           |       |         |        |           |       |
| Mobilization of networks        |      |           |       |         |        |           |       |
| **Total                         | 12   | 10        | 12    | 13.5    | 12     | 10        | 15    |
| Depth of the knowledge          | 7    | 8         | 6.5   | 5.5     | 4      | 6         | 6.5   |
| History of the knowledge        | 5    | 8         | 5     | 6       | 7      | 6         | 3     |
| Dependence on the environment   | 6    | 6         | 5     | 6       | 6.5    | 6         | 3     |
| **Total                         | 19   | 22        | 16.5  | 17.5    | 17.5   | 18        | 12.5  |
| Overall Total                   | 58   | 60        | 57.5  | 62      | 56     | 61        | 53.5  |
| Total minus Manager input       | 52   | 52        | 51.5  | 54      | 48     | 54        | 46.5  |

Note: For confidentiality reasons, the specific fields of knowledge under consideration in figures 3 and 4 have been replaced with generic business unit names (e.g., meat, beverages, and dairy).
Prioritizing the Scores for Each Field of Knowledge

**Figure 38**

### APPROACHES TO CAPTURE, TRANSFER, AND SHARE CRITICAL KNOWLEDGE

**MASK Method and Knowledge Books**

Kraft RDQ&I’s most formal knowledge capture process is adapted from MASK I, which is part of the aforementioned methodology developed by Jean-Louis Ermine. Until Kraft adopted it, MASK was known almost exclusively in France and other French-speaking countries. Kraft’s French business unit originally brought the technique to the KM team’s attention prior to the spinoff when the organization had a global presence.

Using the MASK techniques, Kraft undertakes a step-by-step process to elicit knowledge from subject matter experts and translate it into written knowledge books representing in-depth information and expertise on particular fields of knowledge. To date, the organization has created more than 20 knowledge books, with most focused on the knowledge of experts who are nearing retirement or at risk of leaving the organization. Figure 39 shows a high-level outline of the process.
Many aspects of MASK require a facilitator who can ask questions and capture the elicited knowledge. The KM team believes it is an advantage to have someone outside R&D facilitate the knowledge capture, as long as that person has a science and engineering background. This ensures that the facilitator can understand the material, but does not know enough to make any assumptions about the technical material or the inner workings of Kraft. According to Kraft’s KM team, it is also important to be skilled at asking the right questions in order to prompt experts to share their knowledge.

As a first step, the facilitator conducts a two-hour scoping interview with the expert whose knowledge will be captured. The purpose this interview is to define the breadth and depth of the knowledge to be captured and decide which topics will/will not be addressed. Wolf emphasized the importance of getting the scope right. “We don’t want to capture things that are widely known or well-documented elsewhere; we really want to focus on the stuff that’s unique,” she said.

Based on the scoping interview, the facilitator creates a scoping document that serves as a guide for the project moving forward. All the stakeholders must review and approve the scoping document, including:

- the expert,
- his or her direct manager,
- the knowledge book champion (a senior leader who provides high-level support and helps raise awareness for the completed book throughout the organization), and
- the recipient (the person who is next in line to take over for the expert and who will be responsible for maintaining and updating the knowledge book in the future).
Although the scoping document forms the basis for the subsequent knowledge elicitation, the KM team does not recommend being overly rigid in keeping to the original scope. Sometimes topics or issues emerge that no one thought to include in the scoping document, but that are critical to understanding and documenting the expert’s field of knowledge.

To ensure that the expert can carve out time to participate and make the knowledge book a priority, it is vital to secure the support of the expert’s manager. Once the scoping document is approved, the facilitator conducts a series of conversations with the expert to bring forth the relevant knowledge. The facilitator can talk to the expert as many times as necessary to get through the items outlined in the scope, with each conversation lasting up to four hours. The KM team emphasized that different experts think and communicate differently, and the facilitator may need to spend extra time with experts who are less structured thinkers and/or aren’t as straightforward in describing their knowledge.

A member of the KM team sometimes attends the beginning of the first conversation, but after that, the interviews are conducted one-on-one. In some cases, having extra people in the room may prevent the facilitator from developing a relationship with the expert or inhibit the expert from talking freely. Although the KM team prefers for the facilitator and the expert to have at least an initial face-to-face conversation to build rapport, the organization has successfully produced knowledge books where all the interaction occurred remotely through Skype.

The facilitator takes detailed notes during the conversations and also records the sessions for reference. After each conversation, the facilitator translates the elicited knowledge into a series of visual models. The MASK method provides a set of models for documenting knowledge, including:

1. the **concept model**—describes a topic area by breaking it down into relational components and ideas in a hierarchical manner;
2. the **activity model**—tracks an activity or process from start to finish;
3. the **phenomenon model**—describes the flow from a triggering event through to a final product, including any external influences; and
4. the **history model**—describes the historical evolution of a technology or topic.

Figures 40–43 show examples of the four models most frequently used in the Kraft knowledge books.
**MASK Concept Model**

![MASK Concept Model Diagram](image)

**MASK Activity Model**

![MASK Activity Model Diagram](image)

Figure 40

Figure 41
**Figure 42**

**MASK Phenomenon Model**

- Influence
  - Parameters in the environment external to the phenomenon that may influence the phenomenon positively or negatively

- Source
  - Flow activation location
  - Activation of one or several types of flows (source phenomena)
  - Flow connection between source and target

- Target
  - Action activation location
  - Effect(s) of the reception of the flow (target phenomena)

- Flow

**Figure 43**

**MASK History Model**

<table>
<thead>
<tr>
<th>Timeline A</th>
<th>Generation 1</th>
<th>Generation 2</th>
<th>Generation 3</th>
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<tr>
<th>Timeline B</th>
<th>Generation 1</th>
<th>Generation 2</th>
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<tr>
<td>Ex. Package Development</td>
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<th>Timeline C</th>
<th>Generation 1</th>
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<tr>
<td>Ex. Product Launch</td>
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- Exit criteria (e.g., milestone)
According to the KM team, translating the interviews into the models is time-consuming and often takes longer than the actual elicitation. The focus is on capturing the expert’s unique knowledge and thought patterns for decision-making, as well as incorporating supplementary documents provided by the expert. In creating the knowledge book, the organization uses the expert’s exact words as much as possible, which makes the final product more conversational and less like a dry textbook.

Once the draft of the knowledge book is complete, it is passed back to the expert to answer any questions and edit, add to, and approve the content. If the knowledge book contains content from multiple experts, then the experts must resolve any discrepancies between their content during the editing process, although the books sometimes contain multiple opinions or points of view on a particular topic.

The knowledge book creation process ideally takes three months from start to finish, although some books take longer due to the experts’ availability. The end result is an interactive PowerPoint slide deck that knowledge seekers can navigate to learn about the field of knowledge and its various components. (More information on the completed books is provided later in this case study.)

**Knowledge Mapping**

In addition to knowledge books, Kraft uses knowledge mapping as a fast way to capture knowledge related to specific roles. For this process, the organization outlines and visually depicts all the responsibilities that make up someone’s role, the connections and interdependencies among those elements, and any knowledge or skills that are unique to the role. Figure 44 shows an example of a role-based knowledge map.

The maps are useful in transferring basic information about a position. For example, a manager who is new to overseeing a particular technical area can review the maps to get a high-level view of how his or her employees spend their time and what they are responsible for. In addition, by highlighting knowledge and competencies that are unique to a role or individual, the mind maps can serve as blueprints for future knowledge transfer or informal mentoring opportunities. Sometimes, when employees go through the process of outlining their roles and thinking about skills or knowledge only they have, they are prompted to make sure at least one of their colleagues is up to speed on those aspects of their jobs.
Example Knowledge Map

Figure 44
Managing Access to Critical Knowledge

KNOWLEDGE BOOKS

As noted, Kraft makes its most critical at-risk knowledge available through interactive Microsoft PowerPoint decks called knowledge books (Figure 45). Knowledge books are long, complex documents that can include hundreds of slides, and their structure is designed to mirror the lines of thought of the experts whose knowledge they contain. Each book begins with a foreword written by the experts. This is followed by a key to guide the reader and a hyperlinked table of contents, allowing users to skip directly to topics of interest. Additional links throughout the book guide users through the document and direct them to key points, related topics, and supplementary resources.

Knowledge Book Format

Kraft chose to create the knowledge books in PowerPoint because the format was familiar, user-friendly, and versatile. “We are a culture of PowerPoint,” Mura explained, so people were comfortable with the technology and did not feel they were being asked to use something outside their normal workflow.

The organization also wanted to avoid special software that might limit its ability to edit or access the books in the future. Extensive hyperlinks make knowledge books easy to
navigate, and because PowerPoint is so visual, the books look less daunting than the same information might in a white paper or text-based format.

**TECHNICAL REPORTS**

In addition to knowledge books, Kraft RDQ&I’s most valuable documentation is contained in technical reports summarizing completed projects. The organization encourages R&D staff to submit a technical report for every project they work on in order to ensure that present and future colleagues have access to their work. Employees can look at documentation for current projects to find potential collaborators and avoid duplication across projects. They can also look back at earlier projects to surface forgotten findings and sidestep past mistakes. According to Wolf, researchers sometimes find breakthrough ideas by reviewing older projects that might not have panned out in their own time, but are made more feasible by intervening technological advances.

Kraft’s technical reports typically consist of a single document or a compilation of documents. Although researchers are welcome to write purpose-built white papers and reports, they can also use presentations and documents already created as part of their project work. The KM team has found that this practice alleviates some of the time burden associated with generating technical reports and results in increased documentation. If a researcher is using existing documents, all he or she must do is supply a cover page with a descriptive title, a short abstract, and a few other pieces of metadata in order to submit the report.

**R&D SUITE**

In 2008, Kraft RDQ&I launched an application called R&D Suite to house project knowledge, including knowledge books, technical reports, and electronic laboratory notebooks. R&D Suite is a standard Siemens database application customized to the organization’s needs. In addition to documents created since 2008, the system includes more than 80,000 historical reports from former and current Kraft brands dating back as far as the 1930s.

Kraft R&D uses SharePoint sites for day-to-day work, but R&D Suite functions as a source of curated, vetted knowledge to retain over the long term. The level and type of documentation that goes into R&D Suite is ultimately up to each researcher’s discretion, but the KM team positions the system by asking employees, “If you were someone else reviewing this project 10 years from now, what would you want to see?” All technical reports must be approved by the researcher’s manager and the KM team before they are published to the system; this provides a level of quality control and ensures the organization is getting the level of documentation it needs.

According to Wolf, one of the critical success factors for implementing R&D Suite was that end-users were heavily involved in the design process. When the system was still at the concept stage, the KM team assembled a focus group of R&D employees representing varying levels of technical proficiency and a range of attitudes toward
documentation. This team worked closely with the software developers to decide key elements of the design, including the workflows and the look-and-feel of the cover sheets. Since rolling out the tool, the KM team continues to use this group as a source of feedback on how the system is working and what enhancements or changes might improve the user experience.

One of the cornerstones of the R&D Suite that allows it to function as an electronic laboratory notebook system is an embedded workflow that manages approvals, tracks changes, and so forth. The application is not governed by a formal taxonomy, but it does include controlled lists for Kraft’s brands and other key metadata. Most users rely on free-text searching and sorting of results to find the documentation they need through the system.

**Trends Over Time**

Because technical reports are the starting point for anyone who wants to explore Kraft’s research, the organization considers the number of technical reports being published to be a good indication of how much documentation is occurring throughout the R&D function. As Figure 46 shows, the organization saw a boost in documentation after launching R&D Suite in 2008, but the biggest spike occurred in 2012 prior to the spinoff from Mondelēz. During this period, senior leaders and line managers strongly encouraged R&D staff to submit technical reports not only for their current projects, but also for any historical projects they had failed to document previously. Employees at all levels understood the imperative to make knowledge available before the split, and increased tracking and accountability around documentation led to a massive upswing in technical reports.

Although the number of reports submitted in 2013 is much lower, Mura and Wolf are pleased with the trend given that the organization is now one-third its former size. They also noted that report submissions tend to increase toward the end of the year, so the total is likely to more than double by the end of 2013.

Overall, the KM team believes that the spinoff process has made R&D staff and their managers more aware of the importance of documenting critical knowledge and more familiar with the processes and technologies for doing so. As researchers submitted their flood of technical reports in 2012, they became accustomed to the practice and realized it is relatively fast and easy. As a result, they are more likely to continue submitting reports in the future.
CONNECTING EMPLOYEES TO SHARE EXPERIENTIAL KNOWLEDGE

RDQ&I supports a variety of social networking tools to provide access to expertise and help R&D staff collaborate and share knowledge. The Kraft information systems function offers several enterprise-wide tools for collaboration and social networking. All Kraft personnel have access to microblogging to ask questions and communicate with others in the organization. To help shift the organization toward use of social networking, the Kraft corporate employee homepage consists of a community microblogging site that is the key vehicle for communicating corporate news and activities, including messages from Kraft’s CEO. In a similar fashion, the RDQ&I homepage has a similar social networking site targeted to RDQ&I personnel. In addition, the company-wide directory allows users to share past work experiences and areas of expertise. SharePoint is used universally throughout the organization for document sharing and collaboration. The KM group interfaces with the information systems
function to provide an RDQ&I perspective on new tools; it also offers advice and perspective to RDQ&I users on the use of these tools.

PROTECTING CONFIDENTIAL INFORMATION
Kraft has intentionally kept R&D Suite as an R&D-only tool, instead of incorporating the content into an enterprise content management system. This is in part to alleviate confidentiality concerns regarding the information contained in knowledge books, technical reports, and electronic laboratory notebooks. Only users in the R&D function are given access to the application, and its content is not indexed for enterprise search. Although access to certain technical reports is restricted even within R&D, the organization has established narrow criteria for such restrictions to promote an environment of openness and sharing among researchers.

Managing Change Related to Knowledge Capture, Transfer, and Reuse

ENCOURAGING KNOWLEDGE AND SHARING REUSE
Kraft RDQ&I has leveraged many techniques to promote knowledge sharing among R&D staff, but one of its most effective is the Innovator’s Framework introduced in 2009. At that time, Kraft realized that different parts of RDQ&I were urging employees to adopt a wide range of new tools and behaviors, resulting in people feeling confused and overwhelmed. To address this problem, the teams responsible for KM, intellectual property, and open innovation decided to join forces and create a cohesive message regarding the behaviors they expected from the R&D work force.

The Innovator’s Framework (Figure 47) helps researchers innovate by integrating the competencies and best practices of KM, open innovation, and intellectual property into their development process. Business units are responsible for deciding the areas in which R&D should innovate, but the framework supports the actual innovation process by encouraging researchers to ask three simple questions at the beginning of each project.

- **What do we already know about this particular project area?**—Leverage KM best practices around documentation, collaboration, and reuse of existing knowledge.
- **What do others know?**—Take advantage of open innovation best practices by conducting a thorough technical landscape search, looking for partnership opportunities, and/or engaging in technical scouting.
- **What is our intellectual property strategy in this area?**—Ensure that a technology or project does not infringe on the intellectual property rights of others.
The framework is presented as a toolbox on Kraft’s intranet containing the three questions, as well as a series of actions that employees can take to apply KM, open innovation, and intellectual property best practices. Each action translates into a targeted question and links to specific resources. For example, the question, “What’s been done before and what did you learn?” links to the R&D Suite so employees can search for documentation on similar past projects.

**The Innovator’s Framework**

Back when Kraft was a global organization, the RDQ&I team executed a global road show to promote the Innovator’s Framework and engage researchers. As part of the road show, representatives from the KM team presented success stories where R&D had leveraged existing knowledge to accelerate development timetables and save the organization money. The team also printed badge cards listing the questions and encouraged managers to pull out their cards and ask the questions during project reviews and performance review meetings. This helped enforce the importance of considering the questions and keeping the answers in mind throughout the product development process.

Mura said the framework resonated with employees because it was simple and provided an easy way to apply best practices. The organization does not intend to continue the road show now that it is so much smaller, but it is considering converting the road show presentations into e-learning modules to train new employees on the framework.
MARKET AND COMMUNICATE THE STRATEGY TO EMPLOYEES

The KM team has used standard communication channels such as posters, flyers, and intranet posts to get the message out about knowledge capture and transfer, but its most effective communication tools include:

- the Innovator’s Framework,
- publicity of comparative metrics (such as the number of technical reports published by each business unit),
- public recognition of experts who contribute to knowledge books, and
- mandatory training for R&D Suite.

For submitting documentation to R&D Suite, the KM team emphasized the importance of senior leadership support in driving employee behavior. “If it’s your vice president’s priority, in all likelihood it’s going to be your priority as well,” Wolf said.

Training has also been instrumental in communicating the strategy. In terms of formal training, R&D staff members are required to take a class on R&D Suite and project documentation through Kraft University within 12 months of joining the organization. KM RDQ&I also provides extensive help documents and e-learning resources. For example, a wiki comprised of text tutorials, screenshots, and videos walks employees through contributing to and accessing information from R&D Suite.

One of the KM team’s more unique marketing approaches for R&D Suite involved hosting open support sessions called “study halls” where employees could get help using the application. The study halls were designed to provide a casual, friendly environment: the KM team booked a conference room, brought coffee and donuts, and played music in the background. Employees were encouraged to come and go when they wanted, ask questions about R&D Suite, and collaborate together. Overall, the KM team found this to be an effective way to engage employees who did not feel comfortable seeking more formal support, but also did not want to use the self-service learning resources.

When it comes to encouraging participation in KM at Kraft, the biggest challenge is overcoming the perception that employees do not have time to document their work or search for relevant knowledge to reuse. Over the past few years, the Innovator’s Framework, the spinoff, and other factors have helped people see the importance of making time for KM and have made the desired activities seem less daunting.

INCENTIVES AND REWARDS FOR PARTICIPATION

R&D employees are not strictly required to submit technical reports, participate in the creation of knowledge books, or search for existing knowledge related to their projects. However, most researchers understand the importance of documenting their work and leveraging what others have done in the past, Wolf said. In addition, the R&D culture as
a whole supports KM activities, so if specific employees are not contributing and reusing knowledge, then it is likely that their managers and colleagues will pressure them to do so.

According to Wolf, experts’ attitudes toward the knowledge books have slowly changed over the past few years. Initially, some experts were hesitant about having the books created, worrying about the time it would take away from their other work. However, most of these experts became more excited and engaged as they went through the process and saw the quality of the final product. Now, the culture has shifted so that a majority of experts see it as an honor when they are chosen to be interviewed for a knowledge book. The books are viewed as a validation of experts’ know-how and an acknowledgement of their importance to the organization. Having a knowledge book published also increases an expert’s visibility to senior leadership, which is one of the strongest motivators for Kraft employees to share knowledge.

As knowledge sharing and documentation become more ingrained in the culture, the organization sees less need for explicit rewards. For example, the KM team used to acknowledge prolific publishers of technical reports, but it has downplayed this in recent years because the expectation is that everyone will publish reports on their projects.

Ensuring Knowledge Is Applied and Used

**STEPS TO ENSURE KNOWLEDGE IS USED**

The KM team works hard to ensure that the knowledge contained in knowledge books and technical reports is consulted and applied on future projects. Identifying the right recipient (i.e., owner) for each knowledge book is key to this effort. The recipient—that is, an up-and-coming expert who will take ownership of the knowledge once the incumbent expert retires or leaves—is responsible for maintaining the book and updating it to reflect new developments and discoveries. He or she is also instrumental in “socializing” the knowledge book by uploading it to R&D Suite, sharing it at department meetings and workshops, and answering any questions that come up. Although recipients usually focus on communicating within their own teams, they work with the knowledge book champions to make sure that other R&D groups are aware of the books and the knowledge they contain.

The KM team’s experience is that knowledge book recipients are much more likely to maintain, use, and promote their books if they are involved in scoping and creating them. For this reason, experts are advised to consult their recipients during the early stages of book design and make sure they have a say in the development. Experts are also encouraged to take a back seat when their books are published in order to let the recipients take the lead on presenting and distributing the knowledge.

Another channel that promotes knowledge reuse is the strong relationship between RDQ&I’s KM program and its technical training initiative. Because Mura is responsible for both KM and training, she has been able to link the knowledge books directly to
technical training offered through Kraft University. To date, a corresponding training course has been created for every knowledge book the organization has completed. This connection serves two purposes. First, the expertise documented in the knowledge books provides a foundation to develop training material and teach employees about Kraft’s most important fields of knowledge. Second, the training courses are a way to make employees aware of the knowledge books, R&D Suite, and other information available to them through the organization’s KM initiatives.

**MEASURES/INDICATORS FOR STRATEGY EFFECTIVENESS**

As described earlier in this case study, the KM team uses the number of technical reports published per month and year as an indicator of the amount of documentation going on throughout R&D. The team reports these types of measures to senior managers, who publicize the statistics throughout the organization. The reporting breaks out knowledge contributions by business unit, which encourages informal competition among the businesses to keep up with documentation. The business unit leaders, in particular, do not want their units to have the lowest number of technical report submissions.

The KM team has also conducted surveys to gauge employee attitudes toward knowledge sharing. In a 2011 survey, 74 percent of R&D respondents said that KM was important to them personally and 85 percent said it was important to R&D (Figure 48). Statements such as “my management encourages me to document” also received high ratings. The team credits the Innovator’s Framework and associated road show with contributing to the high scores KM received on the survey.

**Employee Survey Results**

![Employee Survey Results](image)

*Figure 48*
In terms of technical reports and knowledge books, the KM team relies primarily on anecdotal evidence and success stories to track and communicate success. “When managers see the knowledge books, they understand their value,” Mura said. For this reason, the team has not invested in calculating the exact amount of knowledge reuse, time saved through reuse, or return on investment.

Critical Success Factors and Lessons Learned

Mura cites the following success factors associated with Kraft R&D’s KM effort:

- Effective KM requires senior management support and advocacy.
- KM must be driven by the business units and their strategies and needs.
- You have to make it fun and easy or employees won’t want to participate.

Over the coming years, the KM team plans to evolve its KM tools and approaches and further enable the capture and transfer of critical knowledge across the business units. One of the team’s goals is to shift the knowledge books from focusing on a single expert’s knowledge to covering an entire technology or field. The team feels this would make the creation process more collaborative and the output even more useful. Another future initiative involves becoming more systematic in measuring the value of the knowledge books and how the knowledge is reused over time.
Lloyd’s Register: Marine

The Lloyd’s Register Group was founded in London in 1760 as a maritime society to examine merchant ships and classify them according to their condition. With more than 7,900 employees, the Lloyd’s Register Group now provides risk assessment and mitigation services across a variety of industries. Still headquartered in London with an international network of some 7,600 people across 245 locations, the organization is divided into four business divisions: marine, energy, transportation, and management systems. It reported revenues of $1.44 billion (USD) for its 2011–2012 fiscal year.

Lloyd’s Register’s Marine business (the focus of this case study, referred to as Lloyd’s Register or Lloyd’s throughout) is dedicated to supporting innovation in shipping. It is a leading provider of marine classification and certification services around the world, helping to ensure that internationally recognized safety and environmental standards are maintained at every stage of a ship's life. Through customized solutions, Lloyd’s Register helps owners and operators implement new technologies and innovations and achieve design, operational, and cost efficiencies.

KM PROGRAM OVERVIEW

Lloyd’s Register’s KM program resides under the marine technical director’s authority. The KM team (Figure 49) is composed of seven members and led by Giancarlo Ciaglia, head of knowledge management. According to Ciaglia, the division’s KM efforts focus on getting the right information to the right people at the right time.

Lloyd’s Register Marine’s KM Team

![Figure 49](image-url)
Developing a Strategy and Process to Protect Critical Knowledge

Lloyd’s Register developed its KM strategy to improve knowledge retention and transfer as a pre-emptive approach to ensure that knowledge remains within the organization when technical experts leave and flows between geographically dispersed project teams. Lloyd’s is also currently experiencing a transition as it relocates from London to its new Global Technology Centre in Southampton, which affects approximately 350 employees. The organization is building the Global Technology Centre to ensure technical experts can continue to collaborate with academia and the maritime cluster more closely in order to stay up-to-date on the latest advances in technology and better serve clients. A major driver of the knowledge transfer strategy is to make sure critical knowledge is not lost during the relocation process, mainly from employees who decide not to relocate or those nearing retirement.

Prior to developing its KM strategy, Lloyd’s experienced several challenges with regard to knowledge flow. Employees had few opportunities to collaborate across regions, and processes were being unnecessarily duplicated. The organization also wanted to improve the efficiency of services to clients and find better ways of connecting its employees to information and expertise. “We had to address these challenges in a way that was thought out, linked to our strategy, and made sense for us to take forward,” Ciaglia said.

To support the implementation of the KM program, the organization adopted the Managing Successful Programmes (MSP) framework. Developed by the U.K. government, the framework is a best-practice approach that public and private organizations use to determine how to deliver successful programs, especially ones with a transformational change aspect. Since the organization knew launching its KM program would incorporate elements of business change, the MSP framework served as an ideal guide to help establish the vision.

Lloyd’s Register spent considerable time working with program managers and business architects to outline the vision and scope of the program. As a result, the organization implemented a number of associated projects and transformational activities with a mix of IT enablers and business change initiatives. The projects were organized to create a balance across three KM factors:

1. **people**—changing employee behaviors related to learning and sharing;
2. **content and processes**—planning and executing projects to capture, store, and disseminate information and knowledge; and
3. **supporting technology**—implementing the software and tools to support various projects.
As the team progressed with its strategy, it outlined seven business benefits that would accrue from enhanced knowledge retention and transfer:

1. **people and content available from one source**—providing a central portal for all technical and business organizations;
2. **technical knowledge retained**—reducing the risk of losing technical knowledge while regenerating existing knowledge;
3. **starters get up to speed more quickly**—providing new hires access to key information;
4. **risk of inconsistencies reduced**—delivering better, more standardized information to employees regardless of location;
5. **technical capability improved**—providing best practices and connecting people with the right experts;
6. **efficiency increased**—helping employees access technical knowledge quickly as part of their normal workflows; and
7. **service to clients improved**—delivering the best possible information and expertise to clients.

Through a detailed benefits mapping process, the KM team was able to link KM activities and their projected outcomes to these business benefits and show how the benefits support the broader business strategy (Figure 50).

**Benefits Mapping**

![Benefits Mapping Diagram](image)

**PROMOTING THE STRATEGY AND BUILDING SUPPORT**

Using the MSP framework, Lloyd’s Register was able to find the right people to sponsor the KM program. According to Ciaglia, the team needed to ensure that it had the right blend of sponsorship to meet the needs of both employees and the organization. The
head of KM is the senior responsible owner of the program board (Figure 51). The program board also includes the global talent manager, the marine HR manager, and the group IT architect. The last two members of the program board are the business change manager, who oversees a number of change agents, and the program manager, who oversees IT project managers and business project managers. The sponsoring group is led by the marine technical director and includes the marine operations director, group HR director, and group IT director.

“The MSP framework guided us through the development and implementation of the program. The technical director and operations director both sponsored the effort. The team is also tied in very closely to the HR director and IT group,” Ciaglia said. “So putting together the HR processes and IT enablers helped facilitate the development and implementation of the program to make sure it follows the vision.”

**Sponsorship for Lloyd's Register’s KM Program**

The next step was to make employees at all levels aware of the program. The use of the MSP framework outlined the responsibilities of senior management. The challenge was to make sure everyone else within the organization was aware of the program. The KM team decided on a branding message that emphasized the simplicity of knowledge sharing. The campaign revolved around a series of animations and a logo featuring the word “share.”

According to Kate Garrett, knowledge and learning specialist: “Sometimes KM can be criticized or deterred in organizations if the message is not clear, and that negative impression can cloud what those KM programs are trying to achieve. With the ‘share’
logo, the promotion was kept simple and made to appeal to the various cultures within the organization.”

To support the introduction of this new strategy, the KM team distributed a series of animations designed to be different and memorable. The team also used flyers, brochures, and other promotional items.

The KM team thought the originality of the campaign would help draw attention and sell the message. The team was trying to show employees that knowledge sharing was something they had been doing for a very long time, and now they were being given tools and techniques that could help them share more effectively as part of their everyday jobs.

### Defining and Documenting Critical Knowledge

Lloyd’s Register’s knowledge retention and transfer (KRT) process is a knowledge-sharing framework designed to mitigate risk when people leave the organization, either through retirement or general attrition, and support business continuity. However, the KM team emphasized that the process is not just about capturing critical knowledge when someone retires or leaves; the goal is to tap into key points in the employee life cycle by integrating knowledge capture, sharing, and reuse into everyone’s daily work. To this end, the process helps identify areas of critical knowledge, surface and leverage experts, and develop knowledge-sharing behaviors across the work force.

The KM team worked closely with HR when developing the KRT strategy and process. Specifically, HR provided valuable input to help the KM team link KRT to employee development processes.

### APPROACHES USED TO IDENTIFY CRITICAL KNOWLEDGE

Lloyd’s Register developed a process called knowledge risk assessment to identify gaps in knowledge so that the organization can design plans to capture or develop the missing knowledge. This approach is helpful when there is a risk of losing people with critical expertise, but it is also applied more broadly to ensure that a department, technical function, or office has the knowledge it needs to support ongoing operations.

The four-stage knowledge risk assessment process is described below. It is also depicted in Figure 52.

1. **Scope**—In this first stage, the KM team identifies a technical area or function on which to focus and works with the relevant business and technical managers to understand which specific knowledge domains to include. The team also identifies people with capabilities in that technical area to interview during the assessment stage.
2. **Assessment**—The KM team develops a tailored questionnaire targeted to the technical area or function identified during the scoping. The questions might address topics such as business strategy, present and future workload, market availability, global and local availability/applicability of the knowledge, and any steps an employee might need to take to record his/her knowledge prior to retirement. The questionnaires are usually administered via face-to-face interviews, but some also include an online portion.

3. **Analysis**—The KM team combines the data from the questionnaires and analyzes the results. Through that data and the themes that emerge, the team is able to make recommendations.

4. **Recommendations**—The recommendations are used to trigger focused knowledge retention and transfer activities, including the KRT process, or highlight knowledge areas at risk that require further attention.

![Knowledge Risk Assessment Process](image)

Figure 52

**Business Continuity Planning Associated with the Relocation**

The relocation to Southampton was the main business driver for developing the business continuity plan (BCP), a document used to identify critical business functions and document the actions managers should complete to ensure continuity of operations throughout the transition. The actions assigned on the plan fall into three categories: recruitment, redeployment, and retention and transfer. For retention and transfer, the plan specified which functions in the organization are at risk of losing knowledge, along with any notable individuals with critical knowledge in those functions.

The KM team evaluated what level of KRT work was required for each function. Each department had its own transition date for the relocation, which allowed the KM team to set priorities and deadlines.
Although the BCP was used primarily for the relocation, it was developed before the organization planned to relocate and will continue to be used as part of ongoing strategic planning and KM activities. The BCP is an evolving document that is managed through the HR business partners and owned by the individual business managers. Any issues in KRT come to the KM team through HR and vice versa. If necessary, unresolved issues are escalated to the relevant senior managers.

Prioritization is managed through the KRT planner, which is a tool the KM team developed to manage the KRT workload associated with the transition and BCP. The planner includes a list of KM activities for employees to complete, who is assigned to work with each individual to complete any KRT work, and the status of each case. The planner also contains feedback from HR and business managers.

**APPROACHES TO CAPTURE, TRANSFER, AND SHARE CRITICAL KNOWLEDGE**

Lloyd’s Register developed its initial knowledge retention and transfer framework in 2005 after researching best-practice approaches. The team wanted to craft a set of structured questions that it could ask employees and then record the answers with the use of a mind map template. The mind map would support decisions regarding the specific knowledge sharing activities employees should undertake.

In 2006, the team presented the process to senior management in its London location. The feedback was positive, and management supported the team piloting the framework in both the United Kingdom and the organization’s other European and Asian offices. The pilot included both employees who were retiring and those moving to different functions within the organization.

Garrett said that, during the pilot process, the KM team realized it needed change agents embedded in Lloyd’s global offices, rather having someone from the central team visit to perform the initial rollout and then leave. The organization established the KRT specialist role in 2007 to meet this need. KRT specialists were nominated by senior managers; most came from an HR/training background, but some had technical engineering backgrounds. The role is part time, with each specialist dedicating about two to three hours per week. The KRT specialists are trained in London and then attend virtual follow-up meetings every quarter.

Knowledge retention and transfer became more integral to the organization when the relocation to Southampton began in 2011. In response to the demand, in 2012 an additional resource joined the KM team specifically to support KRT.

The KM team also refined the KRT process based on feedback from managers and employees. One change was to offer two processes: the standard knowledge retention and transfer process and a streamlined version called KRTLite. The two processes are similar, but KRT is a longer-term approach in which the team works with an expert or knowledge holder for at least a year to develop and execute a knowledge sharing action
plan. In reality, some individuals are not available for that length of time. The KRTLite approach was adapted for situations where a person had only a few months before he/she retired, transitioned, or left the organization. KRTLite focuses on efficiently documenting the most vital knowledge before someone leaves or changes roles.

**Knowledge Retention and Transfer Framework**

The four-stage knowledge retention and transfer framework (Figure 53) guides the systematic capture and transfer of employees’ critical knowledge and experience.

**Knowledge Retention and Transfer Framework**

![Figure 53](image)

Lloyd’s Register created the knowledge capture survey to standardize the initial knowledge documentation process and introduce an element of self-service. The survey is specifically designed to capture details including a person’s role, responsibilities, tasks, key lessons learned, resources, and contacts. To support individuals completing the survey on their own, the KM team developed an online knowledge capture “magazine” that guides individuals through the purpose of the survey and how to complete each section, including a short video from a senior manager and an audio recording of a colleague who has gone through the survey.

Each employee provides his/her answers to the knowledge capture survey in a structured template that becomes that person’s knowledge portfolio. Once employees receive their knowledge portfolios, they review the information captured to make sure they are satisfied with the content. A copy of the knowledge portfolio is then sent to the employees’ managers.

According to Garrett, the knowledge portfolios have proven popular because they provide an extensive structured and documented record of each role, including contacts, resources and documents, related training or experience, and lessons learned. The managers like the portfolios because the information helps them make informed decisions about business continuity and any further KRT requirements. Some of the information from the survey is also made available in the organization’s searchable
expertise database, People Finder, to help employees find information about individuals and their skills internally. This is an excellent way to ensure that the original data captured in the survey can be maintained and kept up-to-date.

Upon completing their surveys and knowledge portfolios, employees may be required to do additional KRT or KRTLite work based on the knowledge areas in which they work, the results of the knowledge risk assessment process, or needs outlined in the business continuity plan. All KRT work must be agreed on by the individual’s line manager and meet the requirements of the line manager, department, and ultimately the business strategy.

On engaging with individuals in further KRT work, the KM team conducts a face-to-face interview called a knowledge capture interview. The purpose of the interview is to gather more detailed information based on the knowledge capture survey and help the KM team recommend specific knowledge-sharing actions. The interview follows a set of structured questions that allows the interviewee to elaborate on the initial notes captured from the knowledge capture survey and any preliminary discussions with the employee’s manager.

During the interview, the KM team records the discussion in a mind map. Afterward, the KM team reviews the mind map and proposes knowledge-sharing actions for the employee to complete. It’s important that the individual reviews and agrees on the notes recorded in the mind map and the proposed actions. Once the employee signs this off, the KM team meets with the manager to review and approve the knowledge-sharing actions. Most importantly at this time, the KM team and manager also set a time table, which ensures commitment from the manager on how he/she wants the KM team and the employee to execute the plan.

Whereas the knowledge capture interview helps determine the specific knowledge-sharing actions each employee should undertake, the action plan is used to keep track of those activities. Once the plan has been approved, the KM team schedules regular meetings with the employee, his/her manager, and an HR business partner to keep track of the actions, specifying ongoing goals and objectives. This team also discusses who may be responsible for helping the employee with his/her actions.

**Knowledge-Sharing Actions**
The KM team uses a mixture of knowledge-sharing practices and learning tools to support the knowledge retention and transfer process. According to Garrett, the organization wanted a set of generic KM practices that would assist Lloyd’s Register in capturing and sharing knowledge and information. The sharing practices follow.

- **Peer assist**—This problem-solving technique is particularly conducive to teams made up of people with diverse skills or teams looking to share knowledge more effectively. The team identifies challenges or blockers that impede the flow of knowledge and then engages in a session to discuss those problems/blockers. Team
members listen, take notes, ask questions related to the problem, and then work together to come up with a solution.

- **Case studies**—Lloyd’s uses case studies primarily to document lessons learned from key projects or experiences, which can be recorded and documented or shared in a face-to-face session.

- **“An audience with…”**—Technical experts deliver presentations focused on their career histories or specific knowledge areas. Often given by people who are about to retire, the presentations are a way to capture and share knowledge with a large audience. The team also uses “an audience with…” to help fill in areas where the organization has little documented knowledge.

- **Knowledge capture interviews**—A core part of the KRT process, interviews allow the KM team to delve further into the individual’s knowledge or a specific knowledge area.

- **Storytelling**—A way to share information informally in either verbal or written form, this technique is used primarily with senior managers, who highlight critical knowledge or lessons in a story format.

- **Collaboration spaces**—Lloyd’s supports 50 collaborative spaces and also leverages wikis for short-term collaboration.

Among the main outputs of the KRT process are technical procedures and guidance, which employees naturally access in the course of their work. The knowledge portfolios are made available to employees to smooth the transition when they move into new roles. In some cases, the KM team uses KRT content to develop training guides for specific roles or areas of the business. For example, the team created a radio communications training guide based on knowledge capture interviews with a retiring radio communications expert.

The KM team recognizes the importance of linking to pre-existing knowledge-documentation and sharing practices across the organization. These practices include induction schedules for teams or knowledge areas, e-learning, video capture to support process maps, training, technical guidance and procedure manuals, and group learning sessions. Clear links between KRT outputs and other learning resources are important to ensure that the knowledge assets created are used and maintained in the relevant learning resource areas (e.g., training department or business improvement department).

Lloyd’s Register uses recent college graduates to develop some knowledge artifacts because they are eager, looking for projects to help them develop their skills, and excited to work with the organization’s technical experts. For example, one graduate conducted a series of knowledge capture interviews and then developed the information captured from that interview into a training guide. Knowledge capture work can be resource-heavy, so using graduates to take some of the load has been effective, especially as the
experts whose knowledge the organization most wants to document tend to be extremely busy.

**KNOWLEDGE APPROACHES AND THE EMPLOYEE LIFE CYCLE**

It is important that Lloyd’s Register think about knowledge retention and transfer not only when someone is exiting the organization, but also at other milestones in an employee’s journey. To ensure the KM team aligns with the HR strategy and the objectives of its HR business partners, the team targets its approaches and communications to different stages in the employee life cycle (Figure 54).

![Lloyd’s Register Employee Life Cycle](image)

Figure 54

For example, Lloyd’s Register has experienced success incorporating knowledge retention and transfer into new-hire orientation and onboarding. New hires and individuals taking on new roles within the organization report that the onboarding process has greatly improved due to the knowledge portfolios, which provide consistent handover notes by role.

Working with HR, the KM team has developed terminology and a framework to describe the relationship among KM, the employee life cycle, and performance management. The KM team is also working with HR to improve the way employees develop within both technical and non-technical roles. Part of this involves ensuring that those demonstrating knowledge-sharing behaviors are rewarded and recognized. The activities in which
employees take part are linked with their personal performance evaluations so they recognize how valuable knowledge sharing is to their career paths.

Managing Access to Critical Knowledge

The outputs of the business continuity plan and knowledge risk assessment process allow Lloyd’s Register to identify its critical knowledge areas. To access this knowledge, Lloyd’s Register employees can use tools and practices such as knowledge portfolios, technical procedures, an expertise location system, and various online collaboration tools.

TOOLS AND ENABLERS TO FIND CONTENT AND KNOWLEDGE

People Finder (Expertise Location)
The People Finder expertise location system is one of the organization’s key tools to enable access to skills and experience. “People Finder is one of those KM tools that needs to be implemented in an organization,” Ciaglia said.

To improve the value of the expertise location system, the KM team supplemented basic HR data with information on employees’ technical backgrounds and academic qualifications. However, the information was not consistent when it was first put into the tool. The KM team determined that the organization needed a consistent skills taxonomy and worked in partnership with the business to create that taxonomy. Now, it is much easier for employees to find colleagues with the appropriate skills and expertise through People Finder.

Wikis
People Finder not only facilitates connections, but also helps the organization identify key people who need to collaborate on a global level. One tool to enable this collaboration is a wiki platform. Rather than creating an encyclopedia-like content library, Lloyd’s Register uses its wikis primarily for short-term collaboration on specific projects or processes. For example, the KM team created a wiki to support the relocation to the Global Technology Centre; the relocation wiki contained project updates, case studies, and blogs.

To ensure the wikis are active and valuable, the KM team evaluates the need for each wiki before it is created and estimates how long it will be used by the project team. Since the wiki is not designed to be used outside the project for which it is created, the KM team archives the wiki once the project ends.

An employee is assigned to be responsible for each wiki, but the KM team steps in if it sees little or no activity. In some instances, a lack of activity just means the archival process has not begun; in other instances, the employee responsible for the wiki needs guidance to get his/her project teammates to use the tool. In these situations, the KM team can provide informal training to drive engagement.
In addition to these project-specific wikis, Lloyd’s Register used its wiki tool to create a technical queries knowledge base. The knowledge base is a simple tool that serves as a central place for staff to ask and answer technical questions related to the organization’s services and solutions. By browsing the knowledge base, the technical community can see the answers provided by subject matter experts and find the best knowledge available to support Lloyd’s customers.

**Communities of Practice**

Lloyd’s Register established communities of practice as a means to learn, share knowledge, and collaborate. However, the KM team recently developed a structured framework to support these communities, which are known as knowledge networks.

Previous experience with communities provided a number of lessons that Lloyd’s applied to ensure the networks would provide business value. In particular, the organization knew it needed to align the networks with business objectives and strategies; ensure appropriate sponsorship, governance, and technology enablers; and integrate community activities with technical and professional career pathways.

The KM team recently developed a structured framework with six themes (Figure 55) to support communities. The new framework, which has obtained senior director-level endorsement and sponsorship, helps communities:

- support onboarding by helping new hires connect to content and experts, improve their understanding of the organization, and establish their own identities in the context of Lloyd’s Register;
- drive continuous professional development through learning and collaboration;
- empower employees to manage their career tracks and professional development; and
- effectively integrate technical and professional induction, training, and development throughout the employee life cycle.

Each community must have a sponsor, ideally one assigned by the senior management team. This individual helps link network activities to the strategic objectives of the business. The sponsor is responsible for assigning an appropriate network leader. Other crucial roles that make up an effective knowledge network include a facilitator and core members.

Garrett emphasized the need for each network to have a strategy-driven business case that lays out objectives, key performance indicators, measures, and approaches. The networks are required to outline goals aligned with the broader KM and business strategy and then report how they are performing against those goals. This is to make sure that the networks are on track and meeting the needs of their members and the business.
Video Content
The team has also had success with videos as a way to provide access to knowledge. On occasion, the team records “An audience with…” sessions to make them more broadly available to employees. In addition, the KM team helps individuals use SnagFilms to make short videos that support guidance documentation (e.g., how to use and maintain a specific database).

Managing Change Related to Knowledge Capture, Transfer, and Reuse

Regarding change management, the KM team emphasized the importance of involving managers in the entire process, whether they are prioritizing tasks according to the business continuity plan or making recommendations on an employee’s knowledge-sharing activities. In addition, the team found it crucial to communicate the benefits of KRT to employees at every level of the organization. People sometimes have a hard time understanding the value to them personally, but making this connection and communicating the benefits is vital to driving employee engagement and participation. Vocal support from leaders and managers also helped with engagement and drove employees to fill out their knowledge capture surveys, even though it was not mandatory.
The creation of the KRT specialist role was a significant factor in promoting and embedding the KM strategy across Lloyd’s Register’s global offices. The specialists work to identify potential candidates for KRT by talking to managers and using tools such as the knowledge risk assessment. The specialists also oversee the execution of employees’ knowledge-sharing plans and promote knowledge-sharing practices within their local offices.

Some of the other change tools leveraged by Lloyd’s Register to support engagement with KRT include:

- **Posters**—which the organization finds simple but effective;
- **Formal and informal training**—including a one-hour master class for managers where they learned about the KRT process, what it could do for their teams, how it links to the BCP, and what best-practice KRT outputs look like;
- **Brochures to describe key aspects of the KM processes**—including a KRT brochure specifically developed for its Global Technology Centre, containing information about the KRT process, the framework, and the benefits;
- **A knowledge capture “surgery”**—in-person open sessions inviting employees to ask questions about the knowledge capture survey and receive hands-on guidance from the KM team to complete it; and
- **Email communications**—including messages to notify managers and individuals about the KRT process and framework as well as senior management endorsement emails.

**Incentives and Rewards/Recognition for Participation**

The KM team ties into existing reward and recognition schemes where appropriate. For example, within the yearly employee performance review, an individual can be measured against behaviors related to knowledge sharing. In assessing behaviors, Lloyd’s Register has developed a dictionary with definitions of its behavioral competencies. By working with the team that created the dictionary, the KM team has been able to add definitions for knowledge-sharing activities. Information was included about knowledge networks, knowledge retention and transfer, collaboration and sharing, and mentoring/coaching.

HR also invited the KM team to support the creation of a career framework to guide employees’ professional development. Within this framework, employees can see how well they are performing in a role and the level of proficiency they should be demonstrating, as well as what they need to do to move to the next role. The knowledge-sharing tools are a key element of this framework for development.

The communities of practice have a newsletter that recognizes employees who have gone above and beyond their designated knowledge-sharing responsibilities. Ciaglia said that, above and beyond formal rewards, employees must recognize the fundamental benefits...
they get from taking part in KM. Eventually the KM team hopes to incorporate a more thorough rewards process as part of yearly employee performance reviews.

Ensuring Knowledge Is Applied and Used

Lloyd’s Register does not want to create and document knowledge only to have it sit in a database unused. The KM team designed its KRT process and KM approaches to ensure that knowledge is put back into the organization’s processes and workflows. Senior leaders have been helpful in communicating these messages to the broader work force, increasing the access and application of knowledge.

Working in conjunction with appropriate business areas, the KM team is able to identify suitable locations and systems for the KRT outputs to be kept and reused (e.g., through the organization’s communities of practice and learning management system).

MEASURES OF STRATEGY EFFECTIVENESS

Figure 56 shows data from a questionnaire used to gather employee feedback on the KRT process. The questionnaire, which is completed by both the individual who underwent the KRT process and his/her manager, includes seven questions designed to assess each participant’s satisfaction with the process. When employees fill out the survey, they rate on a percentage scale how positive, neutral, or negative their experience was; they can also provide comments. The results help the KM team evaluate each step in the KRT process and pinpoint strengths and areas for improvement.

**Snapshot of Feedback Questionnaire**

[Figure 56]

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Critical Success Factors and Lessons Learned

Ongoing support from senior management is integral to the success of the KM program at Lloyd’s Register. It was especially important during the pilot phase when the KM team rolled out the KM tools and processes. Ciaglia and Garrett credit the Managing Successful Programmes framework and the governance of the program board for giving leaders a clear understanding of their role in the process.

Other critical success factors include the strong partnership with HR, communication, and branding.

- The benefit of partnering with HR is that tools like the knowledge risk assessment and the knowledge capture survey are not just additional tasks that employees have to complete. These tools and their outputs are incorporated into employees’ career development, and employees see how the activities connect to broader learning and performance objectives.
- Communication was paramount to the strategy, and the KM team made sure to communicate early and often. Leaders and managers were used to convey key messages so employees found out about the KM processes from the top down.
- Communication worked hand in hand with Lloyd’s Register’s branding message. The organization incorporated consistent communication and branding elements into all posters, flyers, and guides for the KRT process. This helped give the strategy momentum so employees saw the value of KRT and what they needed to do to take part.
Lockheed Martin

Lockheed Martin is a global security company primarily serving the defense, civil government, and intelligence markets. Headquartered in Bethesda Md., the corporation cites the U.S. Department of Defense and U.S. federal government agencies as its main customers and has been the No. 1 IT provider for the U.S. government for the past 19 years. It is divided into a corporate function and six business areas:

- Aeronautics,
- Information Systems and Global Solutions (IS&GS),
- Missiles and Fire Control (MFC),
- Mission Systems and Training (MST),
- Space Systems Company (SSC), and
- International.

The organization has 116,000 employees—60,000 of which are engineering and technical staff—working out of more than 500 facilities across the United States and 70 other countries. It reported revenue of $47.2 billion in 2012.

KM PROGRAM OVERVIEW

Lockheed Martin has many tools and approaches to facilitate the identification, capture, transfer, and reuse of critical knowledge, but it does not have a chief knowledge officer or a central KM program/structure. Instead, the organization supports an assortment of discrete KM initiatives based on the strategic needs of its businesses.

According to Knowledge Strategist Patrice Jackson, this decentralized approach ensures that the KM tools and approaches put in place are suited to each business area's unique needs and culture. For example, one business area has a collaborative environment in which consensus-building is valued, whereas a second is more fast-paced and innovative. At a third, a significant portion of the work force is involved in hands-on engineering and rarely sits down at a computer terminal. Only by providing flexibility can the organization accommodate these differences.

Although there is no overarching corporate strategy for KM, three senior-level executives have championed and led the effort: the Corporate Engineering and Technology vice president, the chief information officer (CIO), and the senior vice president of HR. The Corporate Engineering and Technology vice president has been instrumental in communicating the value proposition for KM to Lockheed Martin's engineers and the managers who guide them. Based on requests and feedback from the business areas, the CIO has invested in knowledge-sharing and collaboration technologies such as an employee profile system, microblogging, and a collaborative brainstorming tool. From a
people perspective, the senior vice president of HR has integrated KM techniques into efforts to leverage experts and develop the next generation of technical talent.

Lockheed Martin’s KM endeavors focus leadership, organizational processes, technology, and learning. Its most impactful KM initiatives include:

- **knowledge continuity**—a formal process to identify critical knowledge, capture it, and transfer it to those who need it;
- **communities of practice**—virtual networks that facilitate knowledge sharing and provide access to expertise in specific knowledge domains;
- **LM Fellows Program**—a program to acknowledge and leverage the organization’s top technical experts; and
- **technical talent management**—tools and approaches to identify critical skills by role and focus employee development on the acquisition of those skills.

Some of these initiatives are managed at the corporate level, but others have developed in the business areas with minimal involvement from corporate. Still others started in one business area and then subsequently were adapted and rolled out to the rest of the organization. Even when an initiative is enterprise-wide, the business areas have significant autonomy in terms of how they implement it, allowing them to adjust the tools and approaches to meet their needs.

To help tie together KM efforts across the organization, KM stakeholders created a grassroots community called LM Knowledge, which spanned the business areas. This group became a sounding board and distribution point for new KM programs or tools proposed by the corporate function; it was also a place for business-area representatives to share KM best practices and lessons learned. The group’s focus and activity level have fluctuated over the years, but the organization cites it as a key element of success, especially during the early years of its KM journey.

**Developing a Strategy and Process to Protect Critical Knowledge**

According to Jackson, many Lockheed Martin business areas can trace the origins of KM back to the 1990s and earlier. However, more strategic support for knowledge transfer at the corporate level took shape in 2005–2006 as part of a horizontal integration initiative focused on increasing Lockheed Martin’s logistics business. The CEO announced a goal to double the logistics business in three years, and the leader in charge of the effort thought that communities of practice could help facilitate this growth. The leader hired Jackson, a KM expert, to create a framework and teach people in the business areas how to launch and sustain effective communities.
Around this time, Jackson was asked to give a strategic business review (i.e., a high-level review to the CEO) explaining the business case for knowledge transfer/sharing and how the organization should be investing in it. The Corporate Engineering and Technology vice president, CIO, and senior vice president of HR attended Jackson's strategic business review and expressed interest in supporting KM at the corporate level; these leaders have been instrumental in advancing KM throughout the subsequent seven years. The organization has added numerous KM tools and approaches over time, some sponsored by Corporate Engineering and Technology and others by the business areas.

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**Ask yourself: What are your leaders investing in for your enterprise into which you can insert knowledge sharing and application?**

— Patrice Jackson, knowledge strategist

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**BUSINESS CASE FOR KNOWLEDGE TRANSFER**

According to representatives from Lockheed Martin’s KM initiatives, the organization has always excelled at documenting explicit knowledge in the form of processes, procedures, approaches, and product specifications. However, employees must master a great deal of tacit knowledge that is not taught in schools, partly because it is classified and partly because the fields are too specialized to merit college tracks. Mentoring and on-the-job training are valuable for filling in some of the gaps, but the informal nature of these activities makes them unreliable as vehicles to safeguard the critical skills and expertise the organization needs. All this led Lockheed Martin to formalize its processes for knowledge capture, transfer, and expertise management.

Another part of the value proposition for knowledge transfer comes directly from Lockheed Martin’s customers. The organization works on many long-term, mission-critical U.S. government and defense programs, and its clients need evidence that program teams can pass down relevant knowledge and maintain their expertise over time in order to ensure program continuity. Furthermore, Lockheed Martin sometimes competes for contracts currently held by competitors, and a key part of winning this business is showing that the project team can glean relevant knowledge from the current contract-holder and transition the project with minimal disruption. Overall, customers expect Lockheed Martin to demonstrate superior KM competencies and to transfer knowledge and best practices not only across its programs and business areas, but also to and from other organizations and government agencies as needed.
Defining and Documenting Critical Knowledge

KNOWLEDGE CONTINUITY

Knowledge continuity is Lockheed Martin’s formal, corporate-wide knowledge transfer program. It is managed by the Engineering Change Organization (EChO) in Corporate Engineering and Technology, a team tasked with assisting in culture change and maximizing use of Corporate Engineering resources within engineering projects and programs across Lockheed Martin’s business areas.

The corporate process was developed in 2008 as part of a corporate initiative to identify and address common reasons for engineering program failure. Lockheed Martin decided to standardize and enhance its knowledge transfer practices in recognition of the fact that, “when you struggle with knowledge transfer, you struggle with keeping programs successful,” explained EChO Team Program Manager Patti Scaramuzzo.

The EChO team was tasked with investigating practices currently in use across Lockheed Martin’s business areas and designing a “best of breed” approach to capture and transfer knowledge. Two preexisting programs formed the basis for the new one: a knowledge continuity process in IS&GS and a technical coaching program in SSC. Some of the same people had been involved in creating the two programs and they had many common features, but some differences existed to accommodate the unique cultures of the two business areas.

The EChO team formed a working group to consolidate the two approaches over a three-month period and then piloted the updated process in 2008. Based on the success of the pilot, the process went fully operational in 2009.

The four stages of knowledge continuity focus on identifying, transferring, capturing, and applying critical knowledge (Figure 57). The purpose is intended to elicit tacit knowledge—“not what’s the architecture, but why it’s the architecture,” in Scaramuzzo’s words. Each knowledge continuity project is characterized by specific objectives, a well-defined project plan, and clear start and stop dates. Each knowledge continuity team is formed to transfer specific skills and expertise and then disbanded once its goals are met.

We believe very strongly that knowledge continuity is a business discriminator for us.

—Patti Scaramuzzo, EChO Team Program Manager
Identifying Critical Subject Areas and Experts
Before conducting knowledge continuity, the first step is to decide on the knowledge domains for which knowledge will be captured. The knowledge continuity process is designed to transfer at-risk, critical program/functional knowledge, but the Corporate Engineering and Technology group lets the business areas decide which topic areas fit this category. The purpose of knowledge continuity is to support the business areas in achieving their goals, and they are best qualified to determine what knowledge is important to their operations. On request, Corporate Engineering and Technology may help a business area determine whether knowledge continuity is appropriate for a particular situation, but the team always serves in a consulting—rather than a prescribing—role.

Lockheed Martin uses a proprietary checklist to help the business areas identify experts who should share their knowledge through the process, but it also relies on a range of other methods, including:

- the LM Fellows Program, which recognizes the top one percent of technical experts;
- a robust talent management program with mechanisms to identify experts and rising technical talent;
- annual employee performance reviews; and
- long-range planning, which helps the business areas understand where they need to grow and any talent/expertise gaps that might emerge as a result of this growth.

The organization never uses a person’s age or tenure to determine expert status. Instead, the main criterion for being deemed an expert for purposes of knowledge continuity is knowing something someone else needs to know. To that end, Corporate Engineering and Technology has observed several instances in which less experienced people
participated as experts in a particular topic area and more experienced people participated as learners.

Identifying, Transferring, Capturing, and Applying Knowledge

A key feature of knowledge continuity is that it is conducted in teams. Although some might think it would be easier to transfer knowledge between individuals since fewer people would be asking questions, Lockheed Martin has found that transfer is more efficient and effective in a team setting. The organization holds the exact structure of its transfer teams to be proprietary, but each team includes at least one of the following:

- **an expert**—an individual who has subject matter expertise to be transferred;
- **a nex’pert**—an knowledgeable individual who is in line to become an expert, but does not yet perform at the level of an expert or have the breadth of knowledge required for expert status; and
- **a practitioner**—a relatively inexperienced individual who knows little to nothing about the subject area being transferred.

Each role within the team has clearly defined duties and expectations with regard to the process, and Corporate Engineering and Technology has found that the teams do not function as effectively without all three categories of participants. In particular, the organization encourages business areas to include practitioners who have little or no experience in the subject, but have a reason to learn the information. Rather than slowing the team down, these individuals tend to question common assumptions and stop the teams from making mistakes. They also speed up the teams in terms of capturing and applying the knowledge.

According to Scaramuzzo, knowledge continuity is different from other, similar processes in that most focus exclusively on knowledge capture and transfer, devoting little time to identifying what knowledge is critical and ensuring the knowledge is applied in context. By contrast, knowledge continuity’s identification stage is extremely detailed. Once the team is formed, its members gather and pinpoint exactly what it is that the expert knows and others within the group need to learn.

Scaramuzzo believes that making identification a team exercise is one of the secrets of knowledge continuity’s success. “Experts have no clue what they know, and the people who need the knowledge have no clue what they don’t know,” she said. Similarly, leaders and managers are not aware of exactly what needs to be shared. It is only through collaborative discussion that the expert(s), nex’pert(s), and practitioner(s) can determine the scope and focus of their activities. This process also helps build buy-in across the team and ensure all members agree the objectives of the exercise.

The next three steps—transfer, capture, and apply—may happen in succession or concurrently. Although the exact techniques are held proprietary, transfer occurs while doing real work, not while sitting around having a meeting. In addition to ensuring
everyone on the team learns the information, the team captures it in a format and repository of its choice. The knowledge capture process is agnostic with regard to specific technologies, and no requirements are placed on the teams except that they store the knowledge in as accessible a location as possible.

The last step is applying the knowledge. Scaramuzzo emphasized the importance of the team applying what it has learned as part of the process, rather than waiting until afterward when the expert has moved on. Even if the knowledge is available in a repository, if it isn’t applied with the expert present, then there is a good chance that the team members will not access and use the captured knowledge over the long term.

In the knowledge continuity pilot Lockheed Martin conducted in 2008, which included 17 teams, the total time spent by all team members ranged from 60 and 114 hours. Although Corporate Engineering and Technology did not continue to calculate this metric, it believes the original data provides an accurate picture of the time investment required to complete a knowledge continuity project.

Originally, Corporate Engineering and Technology believed that knowledge continuity teams needed to meet in person in order to transfer and apply knowledge effectively. However, over time, the group has realized that virtual teams can complete the process as long as everyone on the team operates virtually. A mixed team where some people meet face-to-face and others participate virtually is not conducive to success.

**Managing and Supporting the Knowledge Continuity Process**

Knowledge continuity can be used to transfer any type of knowledge. Although Corporate Engineering and Technology manages and funds the process at the corporate level, the EChO team supports any business-area group that wants to deploy the process, whether in engineering or another function (such as finance or HR). Part of the reason for this is that Lockheed Martin wants to ingrain knowledge continuity into its organizational values and identity. “If we only allowed the engineers to use it, it wouldn’t become pervasive as part of our culture,” Scaramuzzo explained.

Corporate Engineering and Technology is responsible for maintaining the knowledge continuity process and supporting those in the business areas who use it, but it does not try to control exactly when and how the process is applied. When requested, the corporate group provides consulting services, helping a business area or function design its knowledge strategy, identify at-risk knowledge, and develop a funding model for knowledge transfer based on the client contracts it holds and how it is allowed to spend money under those contracts. Because knowledge continuity is designed to transfer at-risk knowledge of strategic importance, Corporate Engineering and Technology occasionally recommends that a business area or function leverage a different technique—such as mentoring—to meet its knowledge need.

When implementing knowledge continuity, Corporate Engineering and Technology usually deploys start-up teams in the business areas and trains them in the appropriate
processes. However, the business areas usually take over the deployment of the process over time, and the hours that business-area employees spend identifying, transferring, capturing, and applying knowledge are funded by their respective programs and businesses (the exact funding structure depends on the contracts and projects in which the employees are engaged).

When executives and managers want to better understand the benefits of investing in knowledge continuity, the Corporate Engineering and Technology organization presents data on “the cost of not knowing,” or the potential financial penalty a business area or function might incur by failing to transfer its critical knowledge. The metric is calculated the cost of employee attrition minus the cost of conducting knowledge continuity for that business area.

Occasionally, a business area tells the EChO team that it is interested in leveraging knowledge continuity, but cannot follow the process as-is for specific reasons. In these situations, the team works to understand the business area’s challenges and then adapts the process to meet its needs. “We help them tweak it so they don’t tweak out some of the magic,” Scaramuzzo said. As a result of these adjustments, there are several variations on the knowledge continuity techniques and team structure.

TECHNICAL TALENT MANAGEMENT AND THE EMPLOYEE LIFE CYCLE

Lockheed Martin feels it is important for people to share and learn throughout their careers, and employees at all levels are encouraged to contribute their know-how to the organization through knowledge continuity, communities of practice, and other channels. To that end, employees receive information about KM tools and approaches as part of the new-hire onboarding process and throughout their tenures.

However, when knowledge transfer requires thorough documentation of pre-identified critical skills, the strategy is formally integrated with the employee life cycle through a technical talent management process using a dedicated tool. Technical talent management (TTM) is used to articulate critical skills and ensure employees build those skills as they advance through the organization. The process works in concert with the other KM processes in Lockheed Martin; for example, LM Fellows serve as de-facto experts and TTM can help identify emerging ones. Individuals in TTM can choose to use knowledge continuity to transfer knowledge, which ensures that both the identified skills and the tacit information around those skills are transferred. Communities of practice enable more opportunities for TTM assignments (Figure 58).
The parts of the organization that participate in technical talent management maintain a formal, top-down approach beginning when executive managers identify core competencies for their business areas. These are usually broad subject matter areas in which employees must be knowledgeable in order to carry out the work of the business. Managers then add a layer of detail by pinpointing the specific skills that require traceability and that fall under those core competencies. The identified skills are divided into three categories: critical, unique, and required. The first two categories are very similar, except that critical skills tend to be more generally applicable whereas unique skills are specific to a program. Required skills are important, but not as essential as critical and unique skills.

Once managers outline the skills for their areas, they must identify the experts in possession of those skills. The experts then help their managers further define the skills and create knowledge checklists in the tool, itemizing all the things someone must learn in order to become an expert in each area (Figure 59). To keep things simple, most managers use a simple yes/no system for their knowledge checklists, rather than a sliding scale indicating degrees of proficiency.
The next step is to identify the protégés for that expertise area (protégé is another term to describe someone in line to become an expert). During an annual goal setting process, managers review the appropriate knowledge checklist with their protégés so they know which items they have completed and which they haven’t. The protégés’ knowledge gaps are used to formulate development plans to ensure they are learning new skills that will increase their value to the business. Managers may leverage a range of approaches to help protégés obtain the necessary skills, including formal training, participation in knowledge continuity teams, informal mentoring, and on-the-job learning. Once a protégé completes the knowledge checklist for his or her subject area, the manager makes a final decision as to whether that individual is designated as an expert.

In addition to supporting the creation of new experts, the technical talent management process helps participating executives and managers identify critical skills at risk (i.e., skills for which there are insufficient experts or soon-to-be experts in the pipeline) and people at risk (i.e., experts and protégés whose programs are ending and need new assignments within the organization). The process also helps with onboarding new employees because managers can look back at the records for past employees with similar skillsets, review the projects and development activities those individuals worked on, and assemble a list of potential experts for the new employees to talk to as part of their onboarding.
Managing Access to Critical Knowledge

Lockheed Martin and its respective business areas support a variety of tools and approaches to help employees share and access knowledge and expertise. These include:

- an engineering online storefront;
- communities of practice focused on specific knowledge domains;
- the LM Fellows Program, LM Fellows Collaboration Network, and LM Fellows Action (FACT) teams;
- a federated search function;
- Lockheed Martin Engineering Assets and Resources Network (LEARN), an engineering learning portal;
- LM Stories and LM Career Stories repositories, which are video libraries containing information about the organization, its history, and careers;
- email forums and email bursts;
- topical workshops, brown-bags, and webinars;
- domain-based corporate leadership forums where representatives from the business areas share information; and
- program engagement activities led by the corporate function.

Like other elements of Lockheed Martin’s KM efforts, there is significant variety across the business areas. For example, IS&GS has implemented a microblogging tool to enable fast-paced conversation and collaboration around innovative ideas.

**KNOWLEDGE CAPTURED THROUGH KNOWLEDGE CONTINUITY**

Lockheed Martin has never tried to consolidate its knowledge artifacts in a single repository. The organization knew this would not be possible due to the rules and requirements of its various projects and programs. For example, many programs are classified, and these must put their knowledge in separate, classified repositories. Other documents and resources are subject to export control security or classed as proprietary/trade secrets. With so many different restrictions, a unified system is not feasible.

In keeping with this strategy, Corporate Engineering and Technology does not dictate a specific format or system for storing the knowledge captured through knowledge continuity. Instead, the teams involved in the knowledge transfer coordinate with their managers and other stakeholders to determine the best way to capture the knowledge and the best place to store it. However, the EChO team encourages the teams to share their knowledge in the least restrictive environment possible, taking into account any constraints attached to their projects and programs. Most knowledge continuity teams store their knowledge assets in shared folders or servers specific to their programs,
SharePoint repositories, or in-house social networking sites. The knowledge is documented in many forms, including both text and video.

When appropriate, the captured knowledge is also incorporated into other repositories and resources. For example, if a knowledge continuity team creates a knowledge artifact that is broadly applicable, it might be added to the LEARN portal. Similarly, if a team captures techniques or best practices that impact corporate or business-area processes, the new knowledge is integrated into the relevant documentation in Lockheed Martin’s process asset libraries.

COMMUNITIES OF PRACTICE

Although not dictated at the corporate level, many of Lockheed Martin’s business areas have robust communities of practice to facilitate access to information and expertise along with knowledge sharing, collaboration, and networking. One of these business areas is Space Systems Company (SSC), which launched its first official communities of practice in 2006 after attending APQC’s annual KM conference and gathering input from an internal collaboration group at Lockheed Martin.

Below is a description of Lockheed Martin’s corporate guidance for communities of practice as well as the community program at SSC. Although each business area approaches communities slightly differently, SSC’s program is similar to those in the other businesses.

Corporate-Level Support for Communities

Lockheed Martin created its first formal communities in the mid-2000s as part of a horizontal integration initiative to grow the enterprise-wide logistics business. The initiative led the organization to hire Patrice Jackson and establish the basic processes and technology for communities of practice.

One of Jackson’s first steps was to create a community of practice “playbook,” which was modified from those of Defense Acquisition University and the U.S. Department of the Navy. The playbook laid out guidelines for setting up communities, phases of community development, effective governance, and so forth. Jackson also conducted workshops for the business areas about communities, assisted business-area teams in building their business cases, and suggested ways to communicate the value to relevant managers and leaders. The business areas were given wide latitude in terms of how they structured and enabled their communities, but the one requirement was that each community had to have a charter laying out the critical issues the community would address and how it would impact the business. Without a charter, a community would not have a clear purpose and therefore would have difficulty getting funding and support from its respective business area.

Jackson explained that, because of their unique cultures, the business areas were allowed to implement communities in their own way. “You have to be adaptive and flexible when
you’re talking about communities because it’s based on the core values of the programs” within a particular business area, she said. Some programs are more innovative, others are more process-oriented, and the community structure must reflect these differences in order to be successful.

Once the business-area communities were up and running, the corporate function convened regular “summits” where representatives from the businesses could gather to discuss successes, challenges, and potential improvements to community administration and management. This strong collaboration network helped ensure that none of the business areas missed out on best practices and solutions discovered by others.

**Communities at Space Systems Company**

When Space Systems Company established its first communities, the team knew that strategic alignment was the key to success. To that end, it collaborated with vice presidents, directors, and experts in the business to determine how communities would support the broader engineering and business strategy. (This emphasis on strategic alignment and business benefit is echoed in all Lockheed Martin business areas.)

Most SSC communities have executive sponsors (vice presidents or directors) who help set the direction and ensure relevance. One or more community leads, along with a core team, are tasked with managing the community’s content repository, setting up monthly or quarterly knowledge-sharing meetings, and locating interesting speakers to present at those meetings. When the communities first launched, the leads tended to be subject matter experts in the topic areas on which the communities focused, but more recently, less experienced employees have started taking on the community lead role as a development opportunity. In general, the communities are relatively un-hierarchical, with many instances of reverse mentoring and sharing at all levels.

As shown in Figure 60, SSC divides the growth of its communities into three phases: an initial phase from 2006–2008, a middle phase from 2009–2011, and a recent phase from 2012–2013. The program has grown exponentially over this period. Beginning with two pilot communities in 2006, SSC had 10 communities by 2008, five focused on technical topics and five on business management topics. As of 2013, SSC supports 23 communities of practice, including four new ones launched in the past year.

During the initial phase, SSC focused on launching communities, strategically aligning them to the business, and establishing the governance and infrastructure to guide community development. Jackson’s playbook was a key resource in helping it progress through this phase. The business area hosted in-person workshops where members of its communities could gather to learn about communities, collaborate, and share. Once launched, communities held knowledge-sharing events and supported online member profiles, discussion boards, and libraries of stored documents. The main benefit of these early communities was that they provided access to experts and expertise across programs, and the Q&A sessions during the meetings were a rapid-fire learning experience.
The communities adopted a shared funding model from the start, with costs divided between engineering, planning, and HR. In addition to securing the necessary resources, shared funding helped spread responsibility and buy-in: “It means everyone has ownership and a stake in the outcome,” explained Technical Trainer Rick Weeks.

The middle phase was marked by the global recession and a redistribution of funding. During this time, the community launch process shifted from in-person workshops to shorter, virtual events. SSC also published a range of self-directed learning resources—including checklists, tools, videos, and so forth—to teach employees about communities and support their development and sustainment. Many informal communities and networks emerged during this period, but the community of practice support team opted to focus on developing the most critical (Tier 1) communities on the assumption that other, less formal communities (Tiers 2 and 3) could emulate and leverage the processes put in place. According to the organization, this proved an effective strategy to maximize the impact of the available resources.

Community events and resources evolved significantly during this period. As experts and others recognized communities as a legitimate platform for sharing, they started to
approach the community leads and ask to present at community meetings. This simplified the job of the community leads and ensured a steady stream of quality content. Greater diversity in terms of topics and presenters at the meetings “sent the message that you didn’t need to be a top expert in order to share your knowledge,” Weeks said, which created a positive cycle of sharing among people at every experience level. When the business area transitioned to a SharePoint-based community platform, tools such as wikis and blogs became available as additional avenues for sharing and accessing knowledge. SSC also started conducting annual health checks during this timeframe to find out what was and wasn’t working inside the communities and surface any concerns that community members had.

In 2012−2013, SSC continued to support and sustain its mature communities while launching others. Additional tools and functionality include:

- capabilities to further customize blogs, wikis, and other sharing channels;
- increased recording of community learning events to make them available in perpetuity;
- eForums that allow any community member to send a message to the entire community;
- a SharePoint portal collection that allows community leads and members to review other communities’ charters and resources; and
- a tool called FacilitatePro that communities can use to host one-hour facilitated brainstorming sessions and share ideas/build consensus in real time.

Formal governance for communities has increased, and many communities now have governance teams to help with community leadership transitions and ensure that the communities document critical knowledge related to their operations.

More managers and leaders are asking to present at community meetings to get the word out about new ideas and initiatives. In addition, vice presidents and directors are reaching out to community leads to explore how the communities can support specific tactical strategies. According to Weeks, “that’s a sign that the communities are truly embedded in the business.”

Lockheed Martin is also seeing more cross-pollination of communities, with employees from one business area joining relevant communities in other business areas to collaborate on shared topics of interest.

**LM FELLOWS PROGRAM**

The LM Fellows Program (Figure 61) is another way in which Lockheed Martin manages access to expertise. The program is designed to identify top technical experts and then make those individuals available to support programs, provide advice, and collaborate to solve the organization’s most challenging technical problems. The Engineering
Excellence team within Corporate Engineering and Technology, which is tasked with enabling engineering success across programs and business areas, administers and manages the program.

**LM Fellows Program**

- Connect the best technical talent to our most difficult technical challenges
- Delivering mission success, vision, and profitability
- Enables corporate wide collaboration of the Fellows
- Access to eForums that connects Fellows and SMEs on technical challenges
- Senior Fellows, Fellows, Subject Matter Experts, and Rising Technical Talent
- Sharing ideas and working together on common technical challenges

Figure 61

Among Lockheed Martin’s 60,000 engineers, scientists, and technologists, around 330 (or always less than 1 percent) are currently designated as LM Fellows. Employees must be nominated by a vice president and then go through a rigorous application and review process before they can become LM Fellows. As part of the vetting, Corporate Engineering and Technology looks at the candidates’ backgrounds and technical knowledge as well as their impact on the organization in terms of winning proposals, successful program reviews, publications, and patent awards. Once approved, LM Fellows serve a three-year term, after which they must repeat the nomination and approval process to remain in the program.

The program has existed for many years, but it was redesigned and updated in 2006. Before that time, the organization did a good job of selecting LM Fellows, but did not have as many processes to leverage their talents throughout the business. Now, a program engagement team within Engineering Excellence assigns LM Fellows to programs in need of assistance. Any program can contact this team and request a fellow to conduct a technical review, complete a risk review, or simply provide advice on the direction of the program or a particular challenge. The team locates an LM Fellow with
the appropriate expertise and deploys him or her to complete a short-term consulting engagement on the respective program (usually around 40 to 60 hours).

Prior to the establishment of this system, it was difficult for Lockheed Martin to source and leverage expertise across programs and business areas because of how its programs are allowed to spend money under their government contracts. By funding cross-program consulting through the LM Fellows Program, the organization is able to deploy appropriate experts almost immediately, instead of having to wait weeks to receive funding approval.

The Engineering Excellence team maintains a database for the LM Fellows containing all their nomination information, including their areas of technical expertise, the programs and patents they’ve worked on, and so forth. From this database, the team can easily pull out a list of applicable experts for a program engagement or other need. The LM Fellows Collaboration Network, a portal on Lockheed Martin’s intranet, makes a more limited version of this information available to the entire workforce. LM Fellows use the network site to collaborate with one another, but it is also where people go to learn about the program, search for or connect with a fellow, and read success stories related to leveraging the LM Fellows across programs. LM Fellows Collaboration Network visitors can also use an e-forum to email all the LM Fellows in a particular topic area. LM Fellows often use the e-forum and the portal to work together and address technical issues.

To complement these virtual tools, Engineering Excellence believes it is important to provide opportunities for LM Fellows to network and collaborate face-to-face. This is accomplished through an LM Fellows’ Conference occurring every 12 to 18 months. All LM Fellows are invited to the conference, and they are encouraged to invite the next generation of technical talent in their areas to attend as their guests. (After attending the conference, these younger employees are encouraged to stay involved in the LM Fellows’ network through the portal and e-forums.)

Conference events include:

- keynote speeches;
- a poster session;
- in-person collaborative meetings for virtual networks and teams; and
- workshops where attendees can brainstorm and share expertise on various topics (e.g., innovation, cloud computing, affordability, and program sustainment).

When a conference event or workshop leads to the development of a new idea or solution, the LM Fellows involved are sometimes invited to present those findings to organizational leaders.

At the 2010 LM Fellows Conference, Lockheed Martin chartered its first LM Fellows action (FACT) teams, which bring together LM Fellows and rising technical talent to collaborate and share knowledge on certain topics. The organization currently supports
19 FACT teams on subjects ranging from systems architecture to fluid dynamics. These teams are ongoing and operate virtually, although they often hold in-person meetings at the conferences.

The program engagement team, the LM Fellows Collaboration Network, the conference, and the FACT teams are all designed to advance the organization’s technical expertise and make it easier to access and apply that expertise across the organization. “For us it’s all about mission success, supporting our businesses, and supporting our programs,” explained Kerri Van Horne, LM Fellows program manager.

OTHER WAYS TO LOCATE EXPERTS AND EXPERTISE

Along with communities of practice and the LM Fellows Program, the Enhanced White Pages is another tool to locate experts and knowledgeable colleagues. This is a profile-based expertise location system similar to LinkedIn where employees self-declare their expertise. People can find LM Fellows and senior experts through the system, but they can also use it to surface colleagues with a much wider range of expertise levels and designations. The HR team uses the Enhanced White Page to match employees for informal mentoring.

If employees cannot find the expertise they are looking for through communities of practice, the LM Fellows Collaboration Network, or the Enhanced White Pages, as a last resort they can use a help button available on the engineering storefront. Requests submitted through the help button are routed to Corporate Engineering and Technology, which uses its extensive networks to find an appropriate expert either inside or outside the organization. Corporate Engineering and Technology is able to answer most help button requests within 24 hours.

SEARCH LM

Given that Lockheed Martin employees store knowledge in so many different formats and locations, a robust search mechanism is crucial to ensure effective access to information and expertise. As of 2009, the organization had 24 separate search tools scattered throughout the business areas, but it has since consolidated many of these into a tool called SearchLM. There are still some tools in the business areas, but with the advent of new capabilities in SearchLM, these tools are also expected to retire in the next year.

As SearchLM was rolled out, the organization engaged in a campaign to index all appropriate repositories and sites for search. The result is that the search mechanism reaches across all enterprise-wide repositories and sites that are free and open to share (excluding information that is classified or otherwise restricted). A program manager and engineering manager within Lockheed Martin’s enterprise and business services group are accountable for maintaining and enhancing search functionality.
Managing Change Related to Knowledge Capture, Transfer, and Reuse

Because of its decentralized approach, Lockheed Martin’s corporate function does not impose specific knowledge initiatives on its composite business areas. Instead, it seeks what it calls “enlightened leaders” in the businesses to pilot KM tools and approaches. Enlightened leaders are defined as people who are open to new ideas and willing to change things up when there is a compelling value proposition. Using these leaders as early adopters, the organization relies on success stories and word-of-mouth to grow support for KM initiatives.

Everything that Lockheed Martin does to identify, capture, transfer, and apply knowledge is ultimately tied to the success of its programs and business areas. Because of the close relationship between KM and business objectives, active leadership support is a critical success factor. For example, if managers do not emphasize the importance of knowledge continuity and check in with their teams regularly, the teams are unlikely to see knowledge capture and transfer as priorities. However, there is a limit to the extent to which leaders should engage in the process. The organization has found that knowledge continuity teams do better when managers are not looking over their shoulders during every meeting—leaders should initiate the process and monitor the metrics, but the teams should feel full ownership over the process and its outcomes.

The appropriate handling and sharing of corporate knowledge is promoted as part of Lockheed Martin’s business culture. The organization has found that formal KM processes help lay the foundation for more informal knowledge capture and sharing. In particular, employees tend to reuse the techniques they learn from knowledge continuity throughout their work, even when they are not on a knowledge continuity team.

To nurture this culture of sharing, Lockheed Martin is careful to position KM in a way that encourages—rather than stifles—openness. For example, it strongly discourages business areas from applying the knowledge continuity process to capture knowledge in anticipation of a reduction in force unless the people involved are aware of the context. This helps ensure that employees feel comfortable documenting and sharing their expertise without worrying that their jobs might be in question.

MARKETING AND COMMUNICATING THE STRATEGY

The Corporate Engineering and Technology group markets knowledge continuity through a range of channels, including:

- briefings to executives,
- presentations at internal conferences and community of practice meetings,
- messages on the Corporate Engineering and Technology website,
- a searchable SharePoint site related to the process,
engineering newsletters, and
meetings with proposal teams.

However, the group has found word-of-mouth and success stories to be its best promotional tools. Most of the programs, functions, and teams that decide to conduct a knowledge continuity project do so because they have heard about the success of other knowledge continuity projects or because they reach out to colleagues who refer them to the process. The sharing of successes among executives has been particularly helpful in promoting knowledge continuity and sparking interest in far-flung parts of the business.

Weeks similarly cites word-of-mouth as a key tool to promote community of practice membership and participation. Especially at the mid-executive level, leaders have been instrumental in communicating the value of the communities, encouraging employees to join them, and encouraging lower-level managers to get their employees to join.

Other marketing for communities includes messages in newsletters and presentations at during staff meetings. The organization also provides community information and training on its intranet (Figure 62). To complement more general marketing about communities and their benefits, community leads are encouraged to promote the events and speakers they have planned as a way to generate interest and drive engagement.

Self-Directed Learning on Communities of Practice

Figure 62
INCENTIVES AND REWARDS/RECOGNITION FOR PARTICIPATION

Lockheed Martin has found that monetary awards and prizes do not motivate employees to capture and share knowledge. Instead, people want opportunities to be recognized by leaders. The most impactful reward is for individuals who have excelled in sharing or applying knowledge to be able to brief a leader on their success, spend some time with that executive, and have their names publicized to the rest of the leadership team. For example, at SSC, community leads are sometimes asked to provide status updates on their communities during engineering monthly reviews, offering them high-level visibility to directors and vice presidents.

Peer recognition is another powerful incentive to share knowledge. For example, community leads, core team members, and presenters who contribute their time and expertise receive acknowledgement during virtual community meetings. The organization also found that, when it made community membership lists public through SharePoint lists, interest in communities increased. People are more likely to capture, transfer, and share knowledge if they feel their activities are visible to their colleagues.

Although knowledge-sharing behaviors and competencies are not formalized as part of Lockheed Martin’s performance management system, employees can include community leadership/participation and other knowledge-sharing activities in their individual goals. Over time, HR has seen more and more people incorporating KM into their performance plans and receiving credit for their contributions. The organization believes this is a sign that knowledge transfer and sharing have been fully embedded in its culture.

Ensuring Knowledge Is Applied and Used

Knowledge and knowledge sharing are prevalent in our proposals, in our programs, and it’s the way we work.

— Patrice Jackson, knowledge strategist

STEPS TO ENSURE KNOWLEDGE IS REUSED

Lockheed Martin’s knowledge continuity process is specifically designed to ensure that the knowledge being transferred is applied and used in the future. For example, the designers opted for a team-based structure because, according to the data, knowledge transferred in a group is more likely to be applied. The organization also explicitly included “Apply” as one of the four stages in its process to ensure that nex’pers and practitioners have an opportunity to utilize what they have learned with the expert and the rest of the team present. When originally piloting knowledge continuity, the Corporate Engineering and Technology group found that, when teams did not go through the Apply step, they were much less likely to go back to the repository of
captured knowledge and use it once the project ended. “In our pilots, there was a huge focus on capturing the knowledge,” Scaramuzzo said, but “capture is irrelevant if you don’t apply [the knowledge] while the expert is present.” Over time, the organization has reviewed and adapted its process to promote the highest possible rate of knowledge reuse. Knowledge captured through knowledge continuity is incorporated into processes, procedures, training, and learning materials whenever appropriate.

For more informal knowledge transfer, such as expertise shared during community meetings or interactions with LM Fellows, Lockheed Martin relies on the tight links between its knowledge approaches and business strategies. Decentralized KM governance enables programs and businesses to choose the knowledge-sharing channels that best align with their needs, cultures, and short- and long-term goals. Because business leaders are instrumental in selecting and adapting the right KM tools and approaches for their work forces, Lockheed Martin has confidence that the knowledge being transferred and shared is directly applicable to, and injected directly back into, the business.

MEASURES OF STRATEGY EFFECTIVENESS AND BUSINESS IMPACT

Each of Lockheed Martin’s KM initiatives has its own measures to track health and business value. For knowledge continuity, the ultimate measure of success is whether the knowledge continuity teams achieve their business goals. Programs and functions initiate knowledge continuity for many reasons: for example, they may need more deployable talent in a particular area to meet customer needs, or they may want to document a process or procedure before the senior expert retires. A knowledge continuity project is classed as successful if these goals are met—in other words, if additional talent is available to be deployed when needed, if an expert retires and his or her successor is able to fit seamlessly into the position, and so on.

Over time, Corporate Engineering and Technology has noticed that knowledge continuity projects tend to produce secondary benefits above and beyond their official objectives. For example, a program might initiate knowledge continuity to capture knowledge in anticipation of an impending retirement, but might achieve a secondary benefit of accelerating time-to-competency for new hires who participate as practitioners. Similarly, the identification step may uncover critical knowledge the business didn’t even realize was at risk when the knowledge continuity team was assembled.

To date, Lockheed Martin has completed more than 300 knowledge continuity projects and trained more than 1200 employees in the process. Scaramuzzo explained that, paradoxically, knowledge continuity’s success has been its biggest downfall in terms of collecting accurate metrics. When the process first launched, representatives from the business areas tracked each knowledge continuity team and reported data back to Corporate Engineering and Technology. However, as the business areas assumed greater ownership over the process, they became less diligent about sharing their progress and metrics with corporate. Because Corporate Engineering and Technology’s main goal is to enable and empower the business areas, it decided not to push the businesses to report data on every knowledge continuity team. For this reason, corporate believes that many
of the official metrics around knowledge continuity—such as how many teams have completed the process and how many employees have participated—are significantly underestimated.

Because of variations in how the business areas apply knowledge continuity and the metrics they collect, Corporate Engineering and Technology has not tried to roll the impact of the process into a uniform measure such as “time saved.” Instead, it is happy to allow each business area to track the elements it finds most important and take credit for its own success. “The real benefit is to the businesses themselves,” Scaramuzzo said. “We have saved some knowledge in areas that are key to helping our customers perform.”

To corroborate the organization’s own metrics, knowledge continuity’s effectiveness has been verified by a 2010 independent study by George Washington University. The process has also been featured as best practice in multiple external publications.

For communities of practice, the organization focuses on activity and health measures such as:

- number of core team members,
- number of overall community members,
- number of meetings and learning events hosted by the community,
- attendance at those meetings/events, and
- visits to the community’s online repository.

The communities also gather feedback from their members in order to grow and improve. For example, a community lead might ask for input on whether a learning event was of value and how he or she could make the community better. Technological advances have made it easier for communities to request and receive this kind of feedback.

Looking at the program as a whole, Weeks cites certain developments as evidence that the communities are progressing and maturing. For example, more communities are outlining formal governance structures and realigning their charters in response to new corporate and business-area strategies. There is also more cross-community activity, with communities co-sponsoring events and facilitating integrated discussions. Finally, the communities are developing more diverse member bases, in terms of both regional location and representation across business areas.

According to Weeks, the organization placed more emphasis on measures when the community program first launched. Individual communities still track and report certain data to show growth and progress, but the focus has shifted to anecdotal evidence about communities’ role and their impact on the business in terms of facilitating knowledge sharing across programs, developing the next generation of technical leaders, and enabling people to access experts and get answers. As more and more success stories
filter up to senior leadership, there is less interest in quantitative metrics and more in qualitative evidence of business value.

**Critical Success Factors and Lessons Learned**

Representatives from Lockheed Martin point to the organization’s flexible attitude toward the implementation and adaptation of KM tools and approaches as a critical success factor. The relative autonomy enjoyed by the business areas ensures that knowledge transfer and sharing align with business needs and helps minimize cultural and change management challenges. Support from corporate executives and grassroots communities like LM Knowledge offer an effective counterbalance to decentralization, ensuring that KM gets the resources it needs and KM representatives in the business areas have an opportunity to network and swap ideas.

**LESSONS LEARNED**

Corporate Engineering and Technology cites these lessons learned for knowledge continuity.

- Knowledge is transferred most effectively in a group setting.
- The best way to identify critical knowledge is through collaborative back-and-forth between experts and the people who need to learn from them.
- When you look at the total number of hours spent transferring knowledge, it is faster to conduct the activities in a group vs. a one-on-one setting. The knowledge is also more likely to be pervasive if it is transferred in a group environment.
- Including inexperienced people on knowledge transfer teams helps avoid assumptions and prevent mistakes. It also speeds knowledge capture and application.
- The knowledge transfer process should include applying the knowledge with the expert present.
- Knowledge transfer is most effective when leaders consistently track the progress of transfer activities and emphasize their importance. However, when leaders/managers get overly involved in the process, it may stifle questioning and learning.
- It is possible to identify, transfer, capture, and apply knowledge in a virtual environment as long as all the participants operate virtually.
Additional lessons learned relate to the organization’s communities of practice:

- Support from an internal expert can lend credibility and help jumpstart your community program.
- Communities should have strong charters aligned with business strategy.
- Community leads and core teams are critical to success. These are the people who manage the content repository, schedule regular events, arrange for interesting speakers, and do all the other activities that ensure healthy communities.
- Informal communities and interest groups may come up with ideas and innovations that you can apply to your formal communities.
- Unless you keep nurturing your communities and communicate their value, interest may wane over time.
- When communities fall dormant for a few months, don’t give up—they may revive and become active again.
U.S. Department of State

Created in 1789, the U.S. Department of State, or State Department, is the federal department responsible for international relations for the United States. The State Department is headquartered in Washington, D.C. Led by the Secretary of State, who is the President's principal foreign policy advisor, the State Department employs approximately 70,000 employees, 55,000 of whom are deployed overseas. Approximately two-thirds of those employees are foreign nationals. Comprised of two dozen regional and functional bureaus, the State Department supports 275 embassies, missions, consulates, and offices abroad.

The State Department operates U.S. diplomatic missions abroad and is responsible for implementing the foreign policy of the United States. It also supports the foreign affairs activities of other U.S. government agencies including the Department of Defense, the Department of Commerce, the Department of Homeland Security, the Central Intelligence Agency, and the U.S. Agency for International Development. In addition, it provides an array of services to U.S. citizens and to foreigners seeking to visit or immigrate to the United States.

The Bureau of Information Resource Management resides within the State Department. Led by a chief information officer, the bureau provides IT services to the State Department and enables it to carry out its foreign policy mission by applying modern IT tools, approaches, systems, and information products. The bureau is expanding the use of collaborative technologies to provide end-users with the most accurate and useful information.

This case study focuses on the Office of eDiplomacy located within the Bureau of Information Resource Management. Chartered in 2002, the Office of eDiplomacy houses the Knowledge Leadership Division, the Diplomatic Innovation Division, and the Customer Liaison Division; responsibilities of the first two divisions are included in this report. The office’s vision is “innovative diplomacy powered by knowledge leadership, superior customer support, and collaborative technology.” Its mission is “advancing diplomacy by providing effective knowledge-sharing initiatives, guidance on convergence of technology and diplomacy, and first-class IT consultancy.”

KM PROGRAM OVERVIEW

The staff in the Office of eDiplomacy comprises Foreign Service officers, civil servants, and contract specialists. The office started with a staff of six people and has grown to about 50 people who support the two divisions in the office relevant to this study (a third division provides liaison services between the Information Resource Management bureau and information management specialists in the field).
The office's approach to transferring knowledge reflects several guiding principles:

- People and organizations are stewards of information, not owners of it.
- Transferring and applying critical knowledge is a continuous process—if you wait until people are leaving, it won’t happen. (Note: Many of the positions within the State Department operate on a two- or three-year rotation.)
- Knowledge sharing is most effective (or most likely to occur) when embedded in the daily workflow.
- Keep technology simple to use.
- Search capabilities are critical.

At the State Department, KM platforms and technologies are integrated and leveraged to increase use and access across the organization. For example, enterprise search favors results from the Diplopedia wiki over other resources. In addition to providing publicity for the wiki, this strategy serves users’ needs: According to members of the knowledge leadership team, Diplopedia articles are often the most useful sources of information because they are written from a user perspective. The goal is to integrate all tools and platforms in order to promote a knowledge-sharing culture.

The Office of eDiplomacy implements the knowledge leadership strategy but recognizes that many other KM activities take place across the organization outside its purview. Senior leaders, including the secretary of state and the undersecretary of state for management, provide high-level support for KM activities and initiatives.

Many KM activities and programs do not have explicitly defined line-item budgets. Like many government organizations, the State Department operates on a tight budget that is constantly scrutinized in order to promote operational efficiency. Some programs are included in existing budgets under an embassy or consulate. Other activities are funded by the Office of eDiplomacy.

Developing a Strategy and Process to Protect Critical Knowledge

BUSINESS DRIVERS FOR KNOWLEDGE CAPTURE AND TRANSFER

In order to appreciate the State Department’s KM strategy, it’s important to understand a few of key aspects of the State Department’s culture. When the Office of eDiplomacy was chartered in 2002, a majority of the agency’s employees were not tech savvy. In fact, very few had Internet connectivity at their desktops. Moreover, prior to 2002, State Department information management practices adhered to the Cold War policy of “need to know,” which aimed to restrict information to the fewest number of people possible.
However, starting in 1998, a series of events drove the need for change with regard to the State Department’s culture and philosophy on knowledge sharing. The first event was the East Africa embassy bombings. A blue ribbon commission chartered to examine the U.S. overseas diplomatic presence found that the State Department wasn’t very good at sharing inside the State Department or with other agencies and therefore recommended the implementation of a KM program. The second event was the terrorist attacks on Sept. 11, 2001. The attacks highlighted the necessity of an increased focus on knowledge distribution within and across government agencies. The third event was the failure of an expensive internal IT project that was started in an attempt to address some of the shortcomings identified after the 1998 bombings and 2001 attacks. This project failed in part because the technology was too complicated, it required too much training, people didn’t know what it was for or how to use it, and there wasn’t enough buy-in from other agencies. The final event was the recognition that the State Department’s antiquated communication system (based on telegrams) no longer met the needs of the department or other agencies. Taken together, these experiences highlighted the State Department’s restrictive communications culture and pointed to a weakened role in the foreign policy process. According to Bruce Burton, senior advisor at the Office of eDiplomacy, the “events triggered our evolution from knowledge guardians to knowledge stewards.”

OVERVIEW OF THE CAPTURE, TRANSFER, AND REUSE STRATEGY

In 2002, the State Department established the Office of eDiplomacy to capture and make knowledge available across the agency and the larger interagency community. The Office of eDiplomacy was given three mandates:

1. Bring end-users into the IT decision-making process.
2. Improve the ability to communicate and collaborate within the State Department and with external partner agencies in the federal foreign affairs community.
3. Develop and implement a KM strategy.

The creation of the office was historically significant because it was the first time that a group was specifically charged with KM. Until this point, KM was incidental in the State Department and was not listed in a specific charter.

The design team benchmarked with a number of other organizations during the design phase of the State Department’s KM strategy and launched what is now the Knowledge Leadership Division in 2003. The initial goals of the KM strategy were to:

- tap into existing knowledge,
- leverage experience and expertise within the organization, and
- find new ways to connect and collaborate across organizational and regional boundaries.
The objective was to enable State Department personnel to find and share knowledge anywhere, anytime. This increasingly includes the ability to do so from any device as well. Between 2004 and 2013, the Knowledge Leadership team implemented a number of programs and tools in support of those objectives and goals, which are described later in this case study.

PROMOTING THE STRATEGY AND BUILDING SUPPORT
Prior to 2002, the State Department’s culture was built on a “need to know” attitude. The evolution to “need to share” has occurred slowly but steadily over the years, enabled by support from State Department leadership and the employees themselves. For example, a memo to then–Secretary of State Colin Powell mentioned the need to change the culture of the organization in order to address the shortcomings described previously. The secretary understood this need and set out a mandate focused on transitioning to a culture of knowledge sharing. Additionally, many employees welcomed the idea of a more open knowledge-sharing environment and helped design and build the program. Finally, the passage of time has helped as well. When the Department of State’s communities of practice program started, people were unfamiliar with communities and worried about the risks inherent in putting knowledge online and sharing it broadly. However, the increased presence and consumerization of IT and social media in the private sector, as well as employees’ personal lives, have helped erase many of the misgivings people had about using these tools.

THE BUSINESS CASE FOR A KNOWLEDGE-SHARING STRATEGY
At the State Department, the business case for KM was driven by both internal and external factors. Externally, the Sept. 11 attacks and the war on terrorism provided a strong impetus for change and highlighted the need to share information more broadly both within and across government agencies. Internally, the leadership of Secretary of State Powell and other high-level officials helped transform the State Department’s attitude toward information sharing. In fact, the support of senior leadership from different functions within the national security realm was a critical success factor in driving the business case for KM.

Defining and Documenting Critical Knowledge

IDENTIFYING CRITICAL KNOWLEDGE
Knowledge Leadership team members have a simple philosophy with regard to identifying critical knowledge: They don’t have the authority or expertise to do it. Instead, they let the end-users of their tools and approaches determine what is critical to them and how best to capture and share it. Built on open source software (except for search), these tools and approaches are designed to help non-technical people easily contribute and access knowledge.
CAPTURING, TRANSFERRING, AND SHARING CRITICAL KNOWLEDGE

Below are descriptions of three programs and tools that State Department employees and the interagency community have at their disposal to capture and transfer critical knowledge:

- **Communities@State**—blog-based communities of practice,
- **Diplopedia**—the State Department’s wiki, and
- **SMART**—the designated system for official communications.

**Communities@State**

All of the bureaus and offices in the State Department need to be able to communicate and collaborate with one another, including individuals stationed at the 275 posts around the world. Launched in 2005, the Office of eDiplomacy’s communities of practice program, called Communities@State, provides users with an easy-to-use blogging platform to publish information and collaborate with colleagues worldwide who share professional interests. In effect, these communities bridge the white spaces in the State Department’s organization chart.

The majority of the State Department’s communities are built on a WordPress blogging platform, although personnel also use Microsoft SharePoint and other applications to coordinate. Community sites can be designed for a State Department, interagency, or classified audience. Most sites are open to anyone with access to OpenNet (the State Department’s intranet) and are self-forming, as well as self-managed.

The communities may be self-forming, but the Knowledge Leadership team uses a defined design and deployment process:

1. Identify a need.
2. Complete a questionnaire.
3. Review, provide feedback, and meet with the submitter.
4. Design, build, and populate the site.
5. Launch the community.
6. Manage the community.
7. Sustain the community.
8. Archive/Revive the community.

Initially, a group of employees identifies a need to communicate and collaborate with one another. These individuals come to the Knowledge Leadership team, where they are asked to complete a questionnaire designed to identify whether certain critical success factors are in place to support the community. The questionnaire includes questions such as, “Do you have executive support?” and “Do you have goals and success measures for your community?” The Knowledge Leadership team reviews the users’ responses to the
questionnaire and provides feedback. The team meets with the submitters, either in person or virtually, in a fashion similar to a business consultation to discuss what the team learned from the questionnaire and validate the information with the submitters. During this meeting, the Knowledge Leadership team also shares lessons learned from other communities.

The next phase is to design, build, and populate the community site. The Knowledge Leadership team spends a significant amount of time supporting the users during this phase, helping them understand what kind of information to include on the site and how to administer the community (e.g., communication plans and how to engage users).

The next step is to launch the community. This might be done through a State Department notice or a cable (especially if it is an interagency community). The community then transitions into the maintenance and sustainment phase. Each community has a life cycle. When a community reaches the end of its life cycle, it may be archived. However, if users rediscover a need for the community at a later date, then the community may be revived.

Most of the State Department’s communities use multiple platforms to promote their content and make it easy for users to engage with them. For example, the FAST (First and Second Tour) Forum provides links to resources on the Diplopedia wiki for its entry-level members who are officers and specialists. In another example, the Econ@State community provides links to communications related to economics in the State Department’s SMART system. In addition, many communities link to related groups in the organization’s Corridor professional networking platform (Corridor is described later in this case study).

The Knowledge Leadership team also supports a community of community administrators where the administrators share ideas, lessons learned, and challenges.

**Diplopedia**

Launched in 2006, the Diplopedia wiki is the State Department’s online collaborative encyclopedia of foreign affairs information. Diplopedia allows employees to self-identify information that will be helpful to their colleagues. State Department personnel can use Diplopedia as a reference tool to share knowledge about the agency, its programs and offices, and other subjects. As such, the wiki has developed into a major knowledge repository for the department. According to the support team, Diplopedia is best for persistent, evolving information that everyone will need at some point, such as office/embassy check-in lists. The forms may change over time, but the basic process remains the same. The added benefit for users is that they can update the information in the wiki themselves.

Another example of the type of information available in Diplopedia is post reports. These reports contain relevant information about a particular country or city where the United States has an embassy or consulate. Topics covered might include local cultural
landmarks and events, regulations (e.g., whether or not personal firearms are allowed at post), and transportation (personal and public). The reports used to be housed in a proprietary database; however, some were out-of-date by several years. The bureau that is responsible for these reports wanted to make them more accessible, useful, and versatile and decided that putting them on the wiki would meet all three criteria. The Knowledge Leadership team worked with the bureau that owned the reports to move them over to Diplopedia. Since the transition, approximately 90 percent of the reports have been updated; the State Department believes this is because of the ease with which people can access and edit information in the wiki.

Reference desk portals are another instance of the kind of information found in Diplopedia. These are one-stop shops for a particular subject or specified group. For example, Deskipedia is for desk officers who work in Washington, D.C. and represent a particular group of countries. (They are the mediators between a bureau in D.C. and the post overseas.) Many are serving in the United States for the first time, and these portals contain information that helps them get up to speed quickly.

Since Diplopedia’s implementation, employees have found new and creative ways to use the wiki. For example, it has proven to be a collaborative and quick tool to create new reports. In 2010, the White House requested a report on a short turn-around on how U.S. embassies have engaged local religious communities worldwide. Prior to Diplopedia, the State Department would use the cable system to ask each embassy for this information. Cables would be sent to the agency and the information collated into a report. In 2010, the bureau responsible for the report decided to use Diplopedia instead. They created a portal in the wiki with instructions for the posts. Each post added its section to the report in the portal. This not only saved time but also created a consistent format across the sections of the report. For the bureau team, it vastly simplified the process of collating the information into a PDF file to send to the White House.

Diplopedia also played a role in the State Department’s crisis management response to the 2010 Haitian earthquake and the 2011 Japanese tsunami. In both instances, the operation center and local embassies used Diplopedia articles to share information relevant to employees in Washington, D.C. and overseas who were either considering travelling to those embassies or were already assigned to them. The wiki also provided information on how to donate to funds created to support those affected by the disasters. Diplopedia proved effective because:

- people could add material quickly,
- multiple people could contribute, and
- no one had to be a technology expert to do so.

Experience has taught the support team that most of the information posted in Diplopedia is accurate; when inaccurate information is found, users either correct it themselves or inform the support team. A disclaimer at the bottom of each page in the
wiki states that the information contained within the page is informative, but not necessarily authoritative.

As with communities of practice, anyone with an OpenNet login can access Diplopedia. This includes local staff as well as embassy staff overseas, diplomats, civil servants, and contractors. However, they need a separate login to contribute to the wiki. The reason for the login is that it creates transparency. With a login, people can see who created a new article or contributed content to an existing one. This also helps ensure the accuracy of the information and create a safe environment in which to share.

Built on MediaWiki software, Diplopedia looks a lot like Wikipedia. At the time this case study was written, the wiki contained more than 16,000 articles and enjoyed approximately 6,600 registered users. The Knowledge Leadership team has one full-time employee working on Diplopedia with a few other part-time employees on the support team.

Diplopedia is closely tied to the State Department’s search function (described in the Managing Access to Critical Knowledge section). In fact, Diplopedia items are weighted higher in the search engine algorithm to encourage people to use Diplopedia.

We want all of our tools to be so easy that you show up and right away you know what to do.

— Bruce Burton, senior advisor, Office of eDiplomacy

State Messaging and Archive Retrieval Toolset (SMART) and Record Emails
Cables are the State Department’s vehicle for official, federal government communications. Prior to the implementation of SMART in 2010, the State Department still relied on its original cabling (i.e., telegram) system implemented in the 1940s to handle these messages. Cables bear a certain amount of authority because they are sent on behalf of the State Department to another organization. Most diplomats have the authority to release (i.e., send) a cable. However, diplomats represent only a small percentage of the population of the entire State Department, and most employees cannot send cables.

The transition to SMART in 2010 was driven by the 9/11 Commission Report, which noted that federal agencies were not effectively sharing information. The updated SMART system—which relies on a customized add-in for the Microsoft Outlook e-mail program—enables diplomats and others to send official messages and automatically archive them. With the move to SMART, employees with the authority to send cables can embed graphics, insert hyperlinks, and attach documents to cables. This represents a huge improvement in the operations and communications capability of the State Department, even though it’s something private industry has been able to do for many years.
The State Department processes more than one million cables per year, which equates to approximately one cable for every 800 e-mail messages. The challenge inherent with e-mail messages is that they are not public or searchable, so their content is frequently lost. To address this, SMART allows users to create something called record e-mails, which are a hybrid between a formal cable and a regular e-mail. And, unlike a cable, anyone can release or send a record e-mail.

The purpose of record e-mails is to preserve the nation’s history. Because e-mail is easier to use, people tend to prefer it over cables, which meant a lot of knowledge about key decisions and why they were made wasn’t being preserved. Record e-mails allow employees to use a standard e-mail format while automatically saving the information to the archive. Record emails have many of the same features as cables, but do not require release authority and are addressed to individuals or groups, rather than organizations. With the ability to save emails to a searchable archive, it’s much easier to capture critical knowledge such as how and why certain decisions were made.

As part of the “need to share” environment, the messages in the SMART archive are searchable as long as they bear no restrictive (e.g., classified) markings. To protect confidentiality, the system uses role-based access control to determine what each individual can access in the archive. The SMART archive also represents a substantial improvement in the ability of State Department personnel to access a much broader base of knowledge relevant to their current positions and long-term professional interests.

**EXAMPLE: PORTFOLIO CONTINUITY AT THE U.S. EMBASSY IN KABUL, AFGHANISTAN**

More than a decade after the United States returned a diplomatic mission to Afghanistan following the post-9/11 invasion, Embassy Kabul remains a post that faces continuous crises. Information about people, places, issues, and organizations is crucial for achieving the post's mission, as well as ensuring the safety and security of its personnel. However, capturing and transferring this knowledge is complicated by rapid turnover—most personnel rotate in and out for one-year tours—which places a high value on getting new personnel up to speed. The embassy has addressed the time-to-competence problem in part by developing an overlap program so that incoming personnel can interact with the people they are replacing. Nevertheless, the embassy concluded that it needed a more formal means of documenting the knowledge of embassy staff and making it broadly available to others.

Accordingly, in 2011, the embassy implemented its Portfolio Continuity program, a SharePoint-based tool designed to bring together information that traditionally had been scattered. The Portfolio Continuity website provides top-level consistency between portfolios (defined as bodies of knowledge) and flexibility for the embassy staff who interact with it. The portfolios are categorized by issue, action office, and goals and foster consistent presentation of information, regardless of type (e.g., published documents, working papers, and emails).
Embassy Kabul believes the success of the Portfolio Continuity program derives from lessons learned in earlier attempts to capture and transfer knowledge.

1. The effort of a new process can't exceed the effort of doing the old process, nor can it differ substantially from how the old process is performed.
2. Even if the new process is labor-neutral and consistent with the existing process, users must perceive a value that makes the new process worth adopting.

The Portfolio Continuity program reflects these lessons. It looks and feels like a well-organized shared drive, captures metadata as part of the Office application suite, and links to other knowledge resources. It encourages adoption by giving end-users a rich environment to find information or create and share knowledge with current and future colleagues at the post.

Managing Access to Critical Knowledge

Below are descriptions of three tools—Corridor, The Current, and SearchState—that State Department employees and the interagency community use to manage their access to critical knowledge and expertise. These tools work in conjunction with the previously described tools and approaches for documenting and sharing information.

CORRIDOR

Launched in 2011, Corridor is the State Department’s in-house professional networking platform. Similar to external networking sites such as LinkedIn and Facebook, Corridor allows people to post information about their professional accomplishments, forge connections with their colleagues, and form interest groups. Located behind the State Department’s firewall, Corridor is an easy-to-use tool for anyone with an OpenNet account, including foreign service, civil service, contractors, locally employed staff, members of USAID (U.S. Agency for International Development), and members of the interagency community. To access Corridor, a person must first join Corridor and accept the terms of use.

The name Corridor comes from the expression “corridor talk.” The idea is that real business doesn’t happen in meetings, but rather in the hallways, at the coffee machine or the water cooler, and over lunch. This is where and when information is exchanged. The Corridor logo (Figure 63) is designed to suggest hallways.

Corridor’s primary purpose is to capture users’ personal information, such as name, position title, location, career history, education, skills, experience, and interests. However, a lot of the data included in profiles is not available through official HR profiles.
Built in WordPress with an open source social networking software package called BuddyPress layered over it, Corridor acts a microblogging platform. It is a place where users can, for example, post information on projects they are working on or share posts from their communities. Information like this is very useful because it helps others learn critical information about their colleagues as well as find expertise, answers to questions, information on post vacancies, information on related projects (which promotes coordination), and even upcoming events. In one example of project coordination, the Corridor support team found a post from an employee describing a crowdsourcing platform project he was involved with to help people at the State Department tap into external expertise. The eDiplomacy team is also working on a crowdsourcing project, so it contacted the individual to compare the two projects, determine whether they could share resources, and ensure they were not duplicating work.

The Corridor support team tries to make accessing information in Corridor as easy as possible. For example, a person with a Corridor profile can join one of the more than 750 Corridor groups (i.e., a group of people within Corridor who share a similar interest, such as Microsoft SharePoint, mobile computing, leadership development, or food trucks) and sign up to receive email notifications of new information in the groups; they can also see feeds from their groups using customized pages in the Current (described in the next section). The support team tries to make publishing information to Corridor as easy as possible by placing a “share to Corridor” button on as many intranet sites as possible. This button is similar to the ones seen on public sites that allow people to share to Facebook, Twitter, or Pinterest. This button can be used in Communities@State to publish community information to Corridor and in Microsoft SharePoint.

Corridor has experienced slow but steady growth in the two years since its launch. There are more than 14,000 profiles in Corridor, but only 5 percent of those profiles are complete, meaning three or more critical fields are completed. Another 17 percent are partially complete, and 78 percent remain incomplete. However, even in an incomplete profile, the system pulls in the user’s phone number, e-mail address, position title, and position information from the active directory so that someone can still contact that person.

Given the risk-averse culture of the State Department, it might be expected that the support team would need to regulate contributions to Corridor. However, the team
decided not to do this; they want it to be self-regulated. Their belief is that Corridor is a
professional network. People’s pictures are next to everything they post, which promotes
transparency. As a result, Corridor users aren’t afraid to come back because whatever
they posted, it was accepted by the larger community, which draws them back. It’s a safe
environment.

The biggest challenges to Corridor’s adoption are its appearance and a lack of awareness
of its purpose. The user interface is similar to Facebook (Figure 64), which makes some
State Department employees uncomfortable since they are sometimes unable to talk
about their work in public. People also struggled with the purpose: How would it help
them in their work? To address these challenges, training at the Foreign Service Institute
now includes information on the purpose and value of Corridor. The Corridor support
team wants people to understand that Corridor is a tool with many facets (e.g., connect
with colleagues, find expertise, and share interests) and that it is there to support and help
them.

Example Corridor Profile

Figure 64

THE CURRENT

Launched in early 2013, the Current enables State Department employees to pull in
external and internal sources of information and integrate them into a single website that
can be tailored to their needs. Similar to the now-retired Google Reader, it’s a kind of personal, continually refreshed feed based on each user’s affiliations and interests.

The Current provides several centrally managed pages with common State Department information such as administrative notices, press releases, and official messages (i.e., cables) sent to all diplomatic and consular posts. Individual users can create up to 10 additional customized pages with nine resource feeds each, including unclassified cables from the SMART system. They can also share these pages with colleagues for inclusion in their personalized page index on the Current. A future version of the Current will include a page catalog where personnel can select and share curated pages.

To foster collaboration, the Current encourages discussion about items of interest by making it easy to share items to Corridor, by email, or in any of the more than 50 active sites in the Communities@State program. The Current also uses an individual’s Corridor account to log in and store customizations. The integration between these platforms has led to substantial, sustained growth and participation in Corridor.

State Department personnel use the Current in various ways. For example, one large embassy displays Current pages on a SMART Board in order to keep staff up-to-date on current foreign affairs events and provide news updates of particular interest to high-ranking visitors.

SEARCHSTATE

Started in 2004, SearchState is the State Department’s enterprise search service. It enables personnel to find the information they need among the millions of items in department websites and databases.

State Department employees can access SearchState three ways: the search box in the Internet Explorer toolbar in their browser, the SearchState home page, and the OpenNet home page. According to Eric Brassil, engagement coordinator and business practice advisor, SearchState is the most widely used KM tool with approximately 75,000 queries per week and more than a million indexed files available for search.

SearchState is built on Autonomy’s IDOL (intelligent data operating layer) 7. It primarily searches indexed content on OpenNet, which is content located behind the State Department’s firewall. There are a few exceptions, however. Content on the www.state.gov Internet site is also indexed for search. All databases are indexed or re-indexed daily to keep the results fresh and surface new content.

In partnership with Diplopedia, the search system ranks or weighs Diplopedia wiki articles higher than other search results. The support team took this action for many reasons. One was to encourage people to use the wiki to collect and curate knowledge. However, it’s also an easy way to make existing information available to people quickly and easily.
The search system uses a combination of relevance and date to sort results. In addition to the standard search results, a curated selection of top matches appears in the middle of the screen (Figure 65). These items, which come from a separate database maintained by the Office of eDiplomacy, have been identified as critical resources containing content that people look for on a constant and continual basis. However, the challenge for the search support team is that this database must be manually maintained. The information collected in the top matches database comes from a number of sources. One source is feedback from users and business owners. The information has to meet certain criteria, however, to be considered a top match. The search support team also uses analytics to identify what people are actually searching for and whether a top match needs to be created. The top matches are a mechanism by which the support team adds human intelligence to search through feedback and subject matter expertise.

![SearchState Screenshot](image)

**Figure 65**
If users experience any trouble with search, such as not finding the information they are looking for, then they can contact the support team directly from the results page. By clicking a link, users generate an e-mail form that automatically fills in the subject they were searching for and then asks them to provide any additional context. The message goes to the support team, which tries to respond within 15 to 20 minutes with the resources the user needs.

These human interventions to support the search function ensure that people find what they need and provide opportunities for the support team to educate users on how to use search effectively. In addition, the requests help identify gaps in content. If the content a user is searching for exists but is not indexed in search, then the support team can follow up to find out why the search system doesn’t index that site or database and/or contact the business owner to get permission to index it. If no content exists, then the team can create a Diplopedia article to make appropriate content available through the search engine.

Managing Change Related to Knowledge Capture, Transfer, and Reuse

One of the original mandates given to the Office of eDiplomacy was to involve end-users in the IT decision-making process. To that end, the office and the Knowledge Leadership team engaged users in focus groups, conducted surveys, and talked to people to collect feedback and insights into how State Department employees feel about sharing knowledge and the mechanisms they prefer to use to do so.

Now, as the Knowledge Leadership team works to maintain and improve the current roster of knowledge-sharing programs and tools, it uses a variety to techniques to engage people in the use of the knowledge-sharing and collaboration tools described in the previous sections. These techniques range from coaching (Communities@State) to community-building activities (Diplopedia) and contests (Corridor). The following paragraphs provide an overview of the efforts the team makes to engage users and improve their experience.

COMMUNITIES@STATE

Members of the Knowledge Leadership team work one-on-one with community administrators to coach them on the three critical success factors to engage their audiences for success. These factors focus on lowering the barriers to participation, engaging people in conversation, and responding to audience needs.

1. **Promote**—Community administrators can subscribe their audiences to receive community update emails with links to new information in the community. They might also cross-promote their communities with related Corridor groups and share the community blog posts to the groups.
2. **Invite conversation**—The tag line for the State Department’s communities is “Connect. Communicate. Collaborate.” The Knowledge Leadership team wants people to understand that a community is more than just a one-way publishing tool: People should feel comfortable using the communities to engage in conversation, share ideas and knowledge, and collaborate. Statistically, there are more than 46,000 entries across the State Department’s 40+ communities, but only about 2,400 comments total. The team works with the community administrators and posters to ensure they invite comments on their posts in order to draw people back into the community, as well as respond to comments from their audiences. However, the Knowledge Leadership team has noticed that when a community cross-pollinates with a Corridor group, there tends to be more discussion in the Corridor group than on the community site itself.

3. **Analyze**—The Knowledge Leadership team provides all of the community administrators with access to the analytics collected on their communities. This access helps the administrators see how many people are accessing their community sites and how frequently they are doing so. They can also see where these people are coming from when they come to the communities and where they go to when they leave. This information helps the Knowledge Leadership team and community administrators understand the behavior patterns of the users in order to better respond to their needs (i.e., do they need different content on their sites) and be open to the changing needs of their users.

**DIPLOPEDIA**

One of the biggest challenges for the Knowledge Leadership technical support team with regard to Diplopedia is supporting the contributor base. As with most public wikis, there are more consumers than contributors on Diplopedia. The support team is working closely with the existing editor and contributor community to build a better sense of community around Diplopedia and increase the contributor base. Currently, the wiki enjoys between 200 and 300 active contributors (out of more than 6,000 users), but the team would like to increase this number. The Office of eDiplomacy simply doesn’t have the staff or expertise to create all the content itself. The support team is hosting events such as “edit-a-thons” and happy hours to help users understand that they are part of a great cause, feel empowered, and encourage new contributors.

**CORRIDOR**

The Corridor support team has tried several techniques to drive engagement in Corridor since its 2011 launch. This includes:

- an “invite your colleagues” feature made available shortly after the launch,
a message from then-Secretary of State Hillary Clinton encouraging people to use Corridor,
cables and other agency notices about Corridor, and
briefings at the Foreign Service Institute.

Each of these caused an increase in participation in Corridor. However, the biggest increases came as a result of two contests held by the support team for State Department interns. The first contest used reverse mentoring: The interns had to teach their managers how to create a profile in Corridor. In return, they received a lunch with a mid-level manager. A second contest for the interns encouraged them to encourage their colleagues to complete their profiles in Corridor in return for having their picture taken with the Secretary of State. Most recently, there was a surge in participation in Corridor after the launch of the Current in 2013. In order to customize the Current, a user must have a Corridor profile to store the customizations to their Current accounts. This increase in engagement in Corridor has remained steady so far, and the support team hopes it will sustain over time.

Ensuring Knowledge Is Applied and Used

To evaluate the effectiveness of the applications used to support its KM efforts, the State Department analyzes use and activity, conducts periodic end-user surveys, and collects anecdotal evidence concerning the value or shortcomings of the particular tool.

The Knowledge Leadership team used Google Analytics to collect information on activity and engagement in their knowledge-sharing programs and tools for many years. In 2011 the team examined the analytics collected to determine whether they were the right ones and whether they provided the kinds of insights the team was looking for.

During the evaluation, the team realized that it was collecting data from at least 20 different sources and that much of that collection was manual. It also learned that, since Google Analytics is housed outside the firewall, the team had no way of knowing where people were coming from when they used the tools or where they went after they left. This data was vital to understanding employees’ patterns of behavior.

At that time, the team decided to bring its analytics inside OpenNet in order to improve operations and track the movement of its users. It also meant that it could customize the analytics to align more closely with agency needs and capture the data in a single reporting capability using automation.

As of 2013, the team publishes a weekly report called the Knowledge Leadership Initiative. This report provides information on who is using knowledge-sharing and collaboration tools, what they are using the tools for, when they use the tools, and where they are located. Using the data collected for more than six years, the team established a
baseline, identifying the number of users, where they are coming from, what they are looking for, what browser they’re using, and so on.

The analytics are shared with community administrators and the Corridor community. The analytics help community administrators understand how well their communities are performing. The administrator might share those analytics with the broader community, especially if he or she wants to promote a benchmark that was reached or a particular event that drove activity (e.g., if the community had more than 1,000 visits in a month). And Corridor groups use the analytics to determine which groups are thriving and what kinds of information people are searching for. Corridor’s analytics include the top five locations (where people are coming from) and the top five groups (by activity level or number of new members). The Knowledge Leadership team encourages community and Corridor group administrators to use the analytics to promote the successes of their communities and groups.

The team also regularly shares the report with the CIO to demonstrate how well the knowledge-sharing tools perform and identify opportunities for improvement.

KNOWLEDGE LEADERSHIP SURVEYS

The Knowledge Leadership team has conducted several surveys since 2003 to inquire about priorities, how people use IT to support the work of diplomacy, and how they use the knowledge-sharing tools and programs. The first survey, conducted in 2003, focused on priorities, including questions such as: Should eDiplomacy focus on mobile computing? Should it focus on collaboration tools? Or should it focus on knowledge sharing? The survey consisted of approximately 20 questions asking people to rank the most important/useful items. The results were clear: People wanted better ways to collaborate internally and with the interagency community.

In 2008 the Knowledge Leadership team conducted a follow-up survey at the request of the CIO, who wanted to know how people used IT to conduct diplomacy. This survey included a few questions asking how people used the internal knowledge-sharing tools and other eDiplomacy programs. It also inquired about the kind of social networking tools people used outside the firewall. The team learned that approximately 42 percent of the responding State Department employees were on Facebook. This was good news for the team since it was considering development of an internal networking platform that later became Corridor. The results confirmed the need for such a tool, especially for those posted overseas.

In 2013 the team conducted a third survey, and at the time this case study was written, they were still analyzing the results. However, early results showed that Diplopedia readership and use doubled in the past five years and that use of SearchState increased dramatically over the same five-year period (Figure 66). However, Communities@State saw the least amount of growth. The team believes that this is due at least in part to the fact that people don’t think of the communities as such. Responses show that people
refer to them as portals, blogs, and other terms, so there may be some inconsistency with how people perceive the communities.

**Percentage of Respondents Participating in Key Knowledge-Sharing Tools**

![Percentage of Respondents Participating in Key Knowledge-Sharing Tools](image)

**Figure 66**

The Knowledge Leadership team includes options for what they refer to as long-form responses in the surveys so people can type in additional information and comments that they want to share with the team. These responses have been very successful for the team, with a 90 percent completion rate. For the 2013 survey, this equated to about 1,400 long-answer responses.

One of the benefits of these responses is that they provide the team with success stories. In the most recent survey, the team asked people to provide examples of business cases, feature requests, and how they are using the programs and tools to collaborate with colleagues. Some of the responses were:

- “Corridor is perhaps the best learning tool I have come across.”
- On Diplopedia: “My boss keeps wondering how I know how to do all this stuff and do it so well. Don’t tell him.”
- “SearchState has helped enhance my work because I turn to it when I’m looking for information from another bureau or from a post.”

Other feedback reflected uncertainty about how Corridor relates to the day-to-day work of the State Department and revealed some misperceptions related to the safety and
security of the tools, specifically Diplopedia. The team looks on these comments as opportunities to reach out to the user community to correct these misperceptions and communicate about purpose, value, and safety of the tools.

**STRATEGIC MEASURES**

In order to ensure the knowledge-sharing programs and tools align with the strategic goals of the State Department, the Knowledge Leadership team uses a tool developed by APQC called the Measurement Alignment Worksheet. Using this tool, the team can trace correlations or connections between the State Department’s strategic plan to the bureau’s IT strategic plan to the mission of the Office of eDiplomacy to specific tools, such as Diplopedia and Corridor (Figure 67). It then creates project objectives, output performance measures, and outcome performance measures. For each point made, the team created a metric that it could tie directly back to the State Department’s goals. According to the team, this is critical to get senior leadership buy-in and support.

**Measuring Corridor’s Success at the State Department**

<table>
<thead>
<tr>
<th>Department Strategic Plan and QDDR-21st Century Statecraft</th>
<th>IT Strategic Plan – Objectives &amp; Indicators</th>
<th>eDIP/KLD KL Mission</th>
<th>Initiative/Project Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Provide the right information via state-of-the-art information management tools, services, and repositories</td>
<td>• Enterprise platform for social media</td>
<td>• Enable department personnel to find and share knowledge anywhere, anytime, from any Department-approved device.</td>
<td>• Develop and deploy “knowledge streams”</td>
</tr>
<tr>
<td>• Provide worldwide access to information and systems via an integrated, continually refreshed infrastructure that extends to mobile end-user devices, such as laptops, cell phones, blackberries, and wireless networks.</td>
<td>• Collaboration tools to streamline user experience</td>
<td>• Integrating KL tools to make them a valuable part of the daily workflow of Department personnel</td>
<td>• Revamp Group functions</td>
</tr>
<tr>
<td>• Enhance collaboration and information sharing with external partners and, through interagency connectivity, the entire foreign affairs community.</td>
<td>• Balance the need for security with the need for continuous innovation by developing a rapid and disciplined risk management process.</td>
<td>• Promoting widespread and effective use of KL practices and tools</td>
<td>• Develop and deploy Corridor marketplace</td>
</tr>
<tr>
<td>• Balance the need for security with the need for continuous innovation by developing a rapid and disciplined risk management process.</td>
<td>• Provide for more efficient work practices and effective IT workforces.</td>
<td>• Establishing and maintaining a stable, flexible infrastructure to support the KLD programs.</td>
<td>• Increase use of Corridor</td>
</tr>
<tr>
<td>• Provide for more efficient work practices and effective IT workforces.</td>
<td></td>
<td></td>
<td>• Increase integration with other KL platforms</td>
</tr>
</tbody>
</table>

**Output Performance Measures**

- # of profiles
- Profile completion %
- # of new users
- # of posts (updates/comments)
- # of groups
- % of members active (periods to be defined)

**Outcome Performance Measures**

- # of unique visitors per day
- # of new participants in groups
- Δ in profile completion %
- Survey end users at end of FY 12 on value added
- Δ in % of active members

Figure 67
The Knowledge Leadership team has strategic measures for each of the eight programs in Knowledge Leadership, as well as a few other programs. Analysis of the data and results from these measures, as well as from the surveys and analytics, highlights gaps in knowledge and content that need to be filled and identifies improvement opportunities desired by the end-users.

Critical Success Factors and Lessons Learned

The Knowledge Leadership team described the following factors as critical to its success over the past decade:

- Have an organization dedicated to knowledge sharing and transfer.
- Provide knowledge-sharing platforms that respond to user needs and are easy for non-technological personnel to use.
- Develop a KM strategy that facilitates communication, provides a means for decision making and measurement, and relates to the organization’s overall mission and goals.

NEXT STEPS

The Knowledge Leadership team described several projects it is working on to improve users’ experience with the knowledge-sharing programs and tools.

Integration

The team has already taken several steps to integrate knowledge-sharing tools that will enhance user experience. One such step was the implementation of a unified tool bar affectionately nicknamed “the Maggie Bar” in honor of the intern who proposed it. The unified tool bar (Figure 68) appears at the top of the user’s screen and includes links to the Current, Corridor, Diplomedia, and other tools. It makes it very easy for the user to move from one platform to another and simultaneously promotes the use of the tools. In the future, the team wants to increase the functionality of the tool bar by enabling its presence on all sites on OpenNet and by including notifications on the bar so people can see, for example, if there are updated posts in their communities or new content in their Corridor groups.

*The Maggie Bar*

![Figure 68](image-url)
A second opportunity for improvement is with the search capability. Currently, there are three separate search functions: search within communities, search within Diplopedia, and SearchState (enterprise search). The team wants to bring all of these together to provide a unified search experience for users.

The team also wants to expand the use of the “share in” functionality in Corridor. That functionality is a custom widget built for WordPress that is plugged into all communities. After observing that some enterprising users created the same functionality in Microsoft SharePoint, the team would like to expand it to more tools because it’s an easy way to pull in content and make hidden content more obvious.

The team is also working with several business owners to index their content to enable it to be found by SearchState and the Current. The Current has a catalog that lists all of the available resources. The team is working on a paged catalog so that, when people create accounts and customize their pages, that information is shared with their colleagues.

**Other Future Opportunities**

Other improvement opportunities on the team’s agenda include intelligent apps, single sign on, a unified user profile, and a crowdsourcing platform. A large percentage of the State Department’s employee population is mobile, and they need all the same functionality on their mobile devices as on their desktops. However, the State Department is in the early stages with regard to mobile applications. A Mobile Applications Council is currently defining the State Department’s strategy in this area. According to one team member, as soon as the State Department gets single sign-on for the Blackberry, Corridor is the first app people will have.

Since many agency employees have to remember approximately 10 usernames and passwords, single sign-on will greatly reduce barriers to use of the knowledge-sharing tools.

The team would like to leverage a unified user profile for its end-users. This means that people would have one profile connected across all the tools so that they don’t have to create duplicates every time they register to use a new tool.

Typically, tasking within the State Department is hierarchical. For example, a regional bureau will task an embassy and then the embassy will task the political section and so on down the chain. The crowdsourcing platform, called CrowdWork, will allow any office or mission domestically or overseas to post a task or project online, tag it with data and requirements (e.g., language skills), and any State Department employee with the requisite skills will be able to respond and complete the task. The platform will allow employees to tap all the experiences and knowledge formally and informally recognized to fulfill those tasks. The goal is to create an internal marketplace for foreign affairs work and match State Department opportunities and requirements with untapped skills and experience. CrowdWork is part of the White House Office of Science Technology Policy’s
Innovation Toolkit project and a customized version of the open source platform called Midas.

The Knowledge Leadership team is currently engaging internal and external partners to collect requirements, solicit feedback, and find participants for the pilot for the crowdsourcing platform.
Wipro Ltd.

Wipro Ltd. is a global IT, consulting, and outsourcing organization that offers IT services, outsourced R&D, infrastructure services, business process services, and business consulting services in finance, retail, transportation, manufacturing, health care, energy and utilities, technology, telecommunications, and media. With 145,800 employees, the organization’s revenue for the 2013 fiscal year was $6.9 billion (USD). Wipro is headquartered in Bangalore and has 978 clients, including more than 150 FORTUNE 500 companies. Its global presence reaches 57 countries through global delivery centers that provide customer support.

Wipro’s business units are supported by service lines, which include business consulting, global infrastructure services, and business processing outsourcing. The service lines provide the latest technology services and solutions to the organization’s customers.

KM PROGRAM OVERVIEW

KM initiatives are aligned with Wipro’s five key strategies:

1. **Do business better**—The organization wants to develop better services, penetrate new markets, and provide superior solutions to its customers.
2. **Innovate to differentiate**—Wipro wants its employees to apply knowledge they gain to develop radical solutions to problems.
3. **Business agility through variabilization**—Wipro invests in emerging technologies and wants to manage new challenges with agility.
4. **Business value through consumerization of technology**—Wipro wants to seamlessly adapt to the shift in IT focus from enterprise to consumer.
5. **Business performance through analytics**—With the use of analytics, Wipro aims to help customers improve investments, marketing strategies, products, services, and productivity.

KM at Wipro is an enterprise-wide effort handled by a dedicated central team. The program, led by Hariprasad Reddy, is within the quality organization, which reports to the chief business officer. The central team’s 35 members are separated into the following groups, each tasked with specific KM support functions (Figure 69):

- **KM customer relationship group**—primarily works on building relationships with customers;
- **KM value-add group**—works with subgroups within the KM team that are dedicated to the organization’s services, lines, functions, practices, and business units;
**KM transformation group**—continuously develops innovative KM products to meet stakeholders needs; and

**KM shared services group**—provides support for the KM program through analytics, premium content, and the promotion of a knowledge sharing culture.

In addition to the central KM team, an extended KM team comprising 120 employees provides part-time KM support for Wipro’s operational functions and service lines. Each operational function has a KM single point of contact as well as a knowledge champion or knowledge manager. The single point of contact and knowledge champion/manger work together to make sure that knowledge is identified, that employees and customers know how to use it, and that it is deployed throughout the organization.

**Wipro’s KM Program Structure**

![Diagram of Wipro’s KM Program Structure]

_CEO, CBO, CQO, KM: Chief Executive Officer, Chief Business Operations Office, Chief Quality Office, Knowledge Management_

**Developing a Strategy and Process to Protect Critical Knowledge**

According to Reddy, Wipro aims for its KM program to be like a solar system in which knowledge is the hub that supports and drives the different functions and initiatives that
surround it. This aspiration is linked to the KM team’s vision statement, which focuses on Wipro being a “highly customer-centric enterprise.” Wipro’s strategy involves delivering innovative solutions through collaboration and seamless knowledge exchange across departments, functions, and locations. As its KM program evolved, the organization rearticulated a KM vision that was closely aligned to its key strategies.

OVERVIEW OF THE CAPTURE, TRANSFER, AND REUSE STRATEGY

Wipro first developed its KM program in 2000 after it experienced a boom in its offshore development centers due to globalization. Wipro saw that its global offices were coming up with solutions that could be used throughout the enterprise. During this time, the focus was on creating content, putting it in the hands of project teams in different locations, and making sure the project teams knew how to use that content. By 2003, Wipro had increased its emphasis on collaboration. The introduction of blogs, wikis, communities of practice, and networks helped bring employees together to share knowledge and ideas. In 2006, the focus shifted to making sure that there was value in the knowledge that was being created and measuring KM’s effectiveness. Wipro pushed to be more customer-centric in 2012, and now value to customers and the business are the overriding critical success factors for the organization’s KM initiatives.

To that end, Wipro’s KM program is evaluated on four overarching criteria:

1. Improved business metrics—This includes generating new business for Wipro, productivity improvements, and cost avoidance.
2. Satisfied customers—The organization’s customers should experience the power of Wipro’s collective knowledge and feel the difference once the engagement is over.
3. Wipro employees stand out in the crowd—A Wipro employee should be able to speak competently about the organization’s domains, technologies, and business parameters.
4. Transformed work force—If all employees are knowledgeable about the different facets of Wipro’s business, then they can collaborate more and deliver a higher quality of work.

These criteria align directly with Wipro’s key business objectives:

- customer satisfaction;
- delivery excellence;
- business growth;
- fostering a culture of knowledge sharing, collaboration, and innovation; and
- employee satisfaction.
Both the criteria and the underlying objectives are supported by the KM program’s 5S Strategy:

1. **Simplify**—Simplify the business processes for collaboration and knowledge transfer, sharing, and retention.
2. **Standardize**—Standardize KM processes and measurement by integrating KM practices and measures into projects.
3. **Segment**—Categorize the work force by segment and then develop customized approaches targeting each segment’s unique knowledge needs.
4. **Secure**—Provide a secure environment to ensure customer intellectual property is protected. This includes a governance process supported by members of the KM staff.
5. **Sustain**—Sustain the KM culture, design, and deployment.

The rest of this section focuses on the Segment and Standardize aspects of the 5S strategy, which are most relevant to the scope of this case study.

**Segment**
Wipro’s KM team categorized the work force into segments such as sales, consulting, delivery, and business process outsourcing and then developed customized approaches for each segment. This enables the organization to tailor KM tools and approaches to the needs of specific audiences. A KM portal was created for each segment with tailored content, KM approaches, and access to repositories that employees in that segment may need. For example, project teams need processes and domain-specific knowledge/trends, whereas the business process outsourcing team is most interested in reusable customer solutions. A dedicated knowledge manager sets up and maintains the portal for each segment.

During the development of its strategy, the KM team identified members of the Millennial generation as their own segment. According to Reddy, about 5,000–6,000 employees join Wipro on a yearly basis, most of whom are in their early 20s. Millennials have different knowledge needs and extract knowledge differently than their older peers do; it therefore makes sense to target specific KM tools and approaches to this audience. The organization also has a separate KM approach aimed at senior management.

**Standardize**
Wipro has developed a KM maturity model (Figure 70) to support standardization. The organization identified 150 strategic accounts and then used the maturity model to penetrate those accounts and establish standard practices for capturing/sharing knowledge and collaborating. This helped create a consistent approach to KM deployment and impact measurement; it also supports the ability to benchmark KM performance across strategic accounts.
Wipro’s KM Maturity Model

Wipro also changed its KM framework (Figure 71). Previously, the framework focused on people, processes, and technology. When the KM team reviewed its internal processes, it decided to reemphasize the people element of the framework, which encompasses customers, managers, partners, and employees. When redesigning the framework, the KM team looked at five people-related elements that were important to monitor:

- behaviors,
- characteristics,
- informal and formal networks,
- expectations from customers and managers, and
- learning capabilities of a cross-generational work force.
Wipro’s KM Framework

Defining and Documenting Critical Knowledge

Wipro looks at KM as a systematic approach to get the right knowledge to the right people at the right time so they can be more efficient and effective and serve customers better. According to Reddy, every employee has a wealth of tacit and explicit knowledge, and the organization must find ways to capture, distill, and share it.

CRITICAL KNOWLEDGE AT WIPRO

Figure 72 shows the different formats in which knowledge is documented and disseminated at Wipro. Reddy said that knowledge can come from a range of sources including customers, employees, market trends, and even competitors. The key decisions are how to capture the knowledge and in what form to distill it.

In particular, employees must think about what knowledge to capture when they are working on a project or engagement. For example, what best practices and lessons
learned can be extracted from the project? Relevant knowledge might come from the project content or from associated activities, such as building the project team and setting the timeline.

**Knowledge Categories**

![Knowledge Categories Diagram]

**APPROACHES TO CAPTURE CRITICAL KNOWLEDGE**

Wipro has the following eight KM initiatives to capture critical knowledge, several of which are described in greater detail below:

1. **knowledge harvesting**—compiling knowledge and content to help bridge the gap between experts and new hires joining the organization;
2. **knowledge innovation**—defining how Wipro’s different KM initiatives lead to innovative solutions for customers and new ways to approach KM in the organization;
3. **knowledge mapping**—integrating KM into the project life cycle;
4. **knowledge analytics**—for example, determining why people go to certain search engines;
5. **knowledge penetration**—reaching into strategic accounts to capture critical knowledge;

6. **knowledge collaboration**—leveraging experts and connecting people in different regions to share knowledge;

7. **knowledge treasure**—storing critical knowledge in a repository that can be easily accessed by employees and customers; and

8. **KM at employee life cycle**—identifying critical points at which Wipro should collect knowledge from its employees.

**Knowledge Harvesting**

Knowledge harvesting is one technique for capturing tacit and explicit knowledge and making it into content. Wipro uses a number of different harvesting approaches including document repositories; a white paper contest; knowledge-sharing sessions; presentations from internal and external speakers; and activities available through the Global Research Center for Consulting, which captures information about Wipro’s customers, market trends, and competitor intelligence and provides research support to consultants.

Wipro captures explicit knowledge through repositories called DocKNet and KompoNents. With DocKNet, employees can upload documents, put them through a workflow process, and then publish them. Once a document is published, it is available to everyone in the organization. However, if a project team creates a document within the context of a project space, then it is not shared outside that project space. KompoNents is similar to DocKNet but focuses on intellectual property such as code, frameworks, and methodologies and is designed to help employees reuse existing intellectual property, rather than doing rework or reinvention. Like DocKNet, if an item in KompNents was created for a certain project or account, then only that project team can access it.

Another channel to generate content involves quarterly contests for white papers and domain competency. For Wipro’s white paper contests, employees submit technical white papers for evaluation. Judges then pick winners based on set criteria, including whether the content is current to a business context, the originality of the idea, the quality of the document, and whether it can be turned into a business offering. For domain quality contests, the criteria are similar, but the KM team looks at the innovativeness and whether customers’ intellectual property is preserved. The contests are designed to foster a culture of knowledge creation, sharing, and collaboration, as well as to enhance employee knowledge.

Knowledge-sharing sessions involve experts in a particular field hosting presentations to communicate their knowledge. The topics range from simple (e.g., how to work with Java) to complex (e.g., advanced analytics). The sessions are recorded and stored in Wipro’s knowledge base, KNet, for future reference.

Knowledge-sharing sessions allow Wipro employees to gain valuable knowledge, especially during the question and answer portion. Participation helps people build
expertise in critical knowledge areas, get updates about changing trends, define efficient solutions through collective expertise, locate the right experts, network, and collaborate. However, the audience members are not the only ones who benefit. By presenting, experts are given an opportunity to discuss and resolve queries in their areas of expertise, support customer needs, get visibility and recognition, and become part of a community that fosters knowledge sharing.

Wipro also conducts mindshare sessions, but these focus on managers and senior experts. For each mindshare session, four or five experts or senior leaders share their knowledge on a topic suggested by employees. Each session has a moderator, and like the knowledge-sharing sessions there is a question and answer portion at the end. The mindshare sessions are held quarterly and recorded for Wipro’s knowledge base.

Wipro also hosts a number of events featuring external speakers. The organization leverages its customer base to speak at these events, tapping into customers as an additional source of knowledge.

Knowledge Innovation
Wipro has developed a number of KM tools and approaches to feed tacit and explicit knowledge into its knowledge base so that its innovation team can look at the information and, with the help of experts, develop innovative solutions. The tools and approaches that support Wipro’s innovation initiative are:

- **SHINE (seek, hands-on, interact, network, and enrich) framework**—training to induct new employees into customer accounts;
- **known error database**—a database that contains past problems and solutions related to helping customers;
- **KM for large problems**—a technique to enable the seamless flow of information among stakeholders in all associated groups of delivery, quality, large program governance council, legal, sales, and finance;
- **KM maturity model for accounts**—an approach for penetrating KM initiatives into critical accounts; and
- **RCA (root causes and alternative solutions) database**—a process to eliminate the root causes of problems and optimize underlying business processes.

Knowledge Mapping
Wipro uses a knowledge mapping initiative to integrate KM into the project life cycle and ensure that appropriate knowledge is created and captured at each project step. As soon as a project is initiated, Wipro creates a project space in its knowledge base for the relevant domain, technology, or customer. This helps organize resources and allow teams to view best practices or lessons learned from past projects. The KM team determines what can and cannot be shared to protect customer intellectual property.
Before finally closing out their projects, Wipro project managers must go through a mandatory process to ensure they have collected all the critical knowledge from each project. A tool called e-Cube, which is part of Wipro's quality management system (veloci-Q), is used to capture and share these project-related best practices.

**Knowledge Penetration**

As part of Wipro's knowledge penetration approach, knowledge managers work closely with account and project teams to understand the needs of key accounts and what is included in project execution. The knowledge managers then conduct diagnostic studies and develop a KM plan for each account. The KM plan needs the approval of a senior manager associated with that account before any solutions can be deployed. The business value generated in each account is ultimately compiled in a story format, which the project manager publishes along with comments narrating how KM initiatives helped with quantitative and qualitative references.

**Knowledge Treasures**

Wipro refers to the KM resources that employees can access and use as “knowledge treasures.” These resources range from documents to blogs and recorded knowledge-sharing sessions. The organization has 1,143 customized portals for accounts, practices, and functions. It also tracks how many times documents are downloaded. The 1.4 million documents in the organization’s KM portals are downloaded 9.9 million times per year on average.

In certain instances, Wipro may transition a project to one of its customers. The organization has several processes in place to ensure that critical knowledge related to these projects is made available not only to employees, but also to the relevant customers. Typically, this includes knowledge concerning identifying risks, assessing the impact of those risks, and working out solutions to mitigate them.

**KNOWLEDGE APPROACHES AND THE EMPLOYEE LIFE CYCLE**

Wipro uses information about where an employee is in his/her career to determine what type of knowledge should be captured from that person and what his/her specific knowledge needs might be. For example, when new hires start at Wipro, the organization makes an effort to capture best practices based on their prior experience or knowledge. New employees are asked about their experiences as they are inducted into their business units, accounts, and/or projects.

Employees may also experience role changes during their tenure at Wipro. Whenever people change roles, their skills are captured; they are asked what they have learned and whether there are any tips and tricks needed for that particular role. This information is made available to the next person coming into the role. If an employee moves to a role where he/she is considered a subject matter expert, then his/her explicit, tacit, and experiential knowledge is captured.
Reddy said that Wipro does a good job of capturing knowledge from employees lost to attrition, but it is still enhancing its processes to capture experiential knowledge from these individuals. Although Wipro has no approaches specifically aimed at employees nearing retirement, knowledge is captured from this group through Wipro’s KM tools and approaches throughout their tenure.

Managing Access to Critical Knowledge

Since Wipro creates knowledge spaces for projects that are accessible only to the relevant account and project teams, it can be hard to disseminate that knowledge across the enterprise. N. Rajendhiran, group manager for KM, said there has to be a balance between protecting knowledge from accounts and projects and modifying it so that all employees can use it.

TOOLS/ENABLERS TO FIND RELEVANT CONTENT AND KNOWLEDGE

Wipro employees primarily use the KNet knowledge base to access and contribute content. According to Rejendhiran, KNet has strong content management capabilities to ensure that employees can find and access knowledge quickly and effectively.

When it comes to accessing content, Wipro believes that one size does not fit all. For that reason, it designed KNet so that it could be customized for different employee groups. As described earlier, each workforce segment has its own KM portal focused on the content most important to that audience.

Wipro is currently piloting a content publishing review process (Figure 73) to ensure that documents uploaded through KNet meet Wipro standards. The process begins when an employee submits a document and provides appropriate metadata, such as the document category and taxonomy tags. An automated tool then reviews the document for plagiarism and any intellectual property violations and informs the contributor if he/she needs to make any revisions. Once the document is approved by the automated tool, an assigned reviewer and the content quality team reviews the document before it is published. Some documents may be sanitized (i.e., stripped of account- or project-specific information) as part of this process.

The best submissions go into Wipro’s premium content platform, which is where the organization stores what it considers to be its most valuable content. Premium content includes white papers, case studies, and best practices.

Federated search and segmented navigation are designed to help employees save time when they are looking for content in KNet. Wipro also created a standard enterprise taxonomy based on how employees think about the business to make it easier for them to find the content they need. The taxonomy also helps Wipro inventory and monitor its content, looking for gaps.
Wipro knows that Millennials are an important segment of its work force and that it must ensure they are taking advantage of the resources in KNet. To this end, the organization has designed a platform for accessing KNet via a mobile device or tablet. Wipro is currently in the process of converting more content to be available through the mobile platform.

Wipro’s global presence motivated it to create a multiple-language knowledge space, which is located in the organization’s knowledge base and includes translations in 14 languages.

**COLLABORATION TOOLS**

Wipro provides numerous collaboration tools aimed at project teams, communities, and the work force as a whole.

PM Connect is Wipro’s collaboration platform for project managers and dispersed project teams. The platform’s features include discussion boards, an idea lounge, events, and lists of experts that can help with projects.
KONNECT is a system that allows employees to register themselves as experts. Wipro sees this system as way to get employees to share their knowledge and help one another. It's also a way for employees to get quick answers to questions on specific topics. The KM team does not validate employees’ expertise as part of the registration process, but the team can see whether registered experts are answering queries. If an employee is not answering queries, then that employee’s profile will be excluded from searches.

Wipro also provides a number of community forums and blogs. The most useful for employees are war rooms, Knowledge Chat (K-Chat), and Wipropedia.

- **War rooms** are collaboration spaces where like-minded people can come together and work in a private and secure environment. The war rooms are meant to be used for brief periods of time in order to develop quick solutions to problems. Any employee can create a war room, and it does not take long to get other employees to join. Although the participants in a war room can get a transcript of the session, this content is not available as part of open search.

- **K-Chat** is a web-based platform where multiple experts share knowledge about a certain topic. K-Chats are useful for capturing tacit knowledge, which is made available through transcripts once the chats are finished.

- **Wipropedia** is a wiki where employees submit ideas or thoughts to share with others. This tool allows people to come together and refine ideas. Project teams are also able to create project-specific wikis to help with deliverables.

**PROTECTING CONFIDENTIAL INFORMATION**

The preservation of intellectual property is of vital importance to Wipro. To help protect intellectual property, a dedicated risk management team identifies employee innovations and ensures that content is protected. The team also helps the organization follow a framework to protect intellectual capital based on four globally recognized standards:

1. Orange Book by the U.K. HM Treasury,
2. COSO's enterprise risk management integrated framework by the Treadway Commission,
3. AS/NS 4360:2004 by the AUS/NZ Standards board, and

In addition, the organization takes steps to make sure customer intellectual property is protected. For example, the content that is created by project teams is never distilled in Wipro’s open search and is only accessible to the members of that particular team. The organization also checks the white papers submitted for contests to guarantee that customer intellectual property is preserved.
CONNECTING EMPLOYEES TO SHARE COMPLEX AND EXPERIENTIAL KNOWLEDGE

Wipro has multiple video series that employees can watch to help them learn. The knowledge-sharing sessions are one example of this; Wipro also produces testimonial and promotional videos for its KM tools and approaches. The promotional videos help employees understand how to use KM tools like the SHINE learning framework and the known error database and provide answers to the most common questions.

Wipro has found that storytelling is one of the most effective ways to share tacit knowledge. Many of the organization’s learning initiatives use storytelling. For example, internal programs use storytelling to support retention and help new hires remember information more easily.

Managing Change Related to Knowledge Capture, Transfer, and Reuse

MARKET AND COMMUNICATE STRATEGY TO EMPLOYEES

Wipro produces a variety of newsletters, posters, and quizzes to help engage employees in its KM tools and approaches. Some of the organization’s key KM publications follow.

- KY-KM (know your knowledge management) provides information and updates on the KM tools, features, and initiatives. The newsletter also contains information on domain competencies and how to find experts. Depending on the content, KY-KM is sometimes sent in video form.
- KMPact features success stories from project teams that have used KM to help them solve difficult challenges. The newsletter is sent every Thursday and is primarily aimed at project teams. The format is similar to a case study and explains how a project team went through the process of using a KM tool and experienced its benefits. Information about the benefits of KM is also included.
- Knowledge Collaboration is a weekly newsletter sent out every Friday. For this communication, different groups record videos in which they talk about the tools, features, and initiatives that help facilitate knowledge collaboration.
- Blog digest is a newsletter that is sent on a monthly basis and contains links to enterprise blogs created in the last month.
- Knowledge Management Newsletter is sent in the last week of the month. Content includes new developments in KM, guest columns, interviews, and any KM achievements.
The Intellectual Knowledge Treasure Newsletter is sent during the second week of the month and focuses on reusable content. The newsletter highlights the top three white papers, best-practice documents, and lessons learned for that month.

In addition to these newsletters, the KM team distributes a quiz called K-wiz every Tuesday. The quizzes cover everything from the organization’s business units, service lines, and functions to practices and customers. The quizzes are intended not only to enhance employee knowledge but also to make employees aware of the knowledge resources that are available to them.

The organization also publishes K-Korner, a poster that displays information about KM initiatives, applications, and events; KM contacts; and past winners of KM quizzes and contests. The posters are primarily displayed at Wipro’s offshore development centers.

INCENTIVES AND REWARDS/RECOGNITION FOR PARTICIPATION

Wipro gives out rewards and recognitions for KM on a quarterly basis. For example, the organization has awards for the “expert with the best number of responses” and “best harvester” (these individuals are considered to be change agents) along with other awards for those who access and use the content available in KNet and KM portals. Winners receive certificates, and monetary bonuses are associated with some awards. However, the KM team has found that employees are less interested in tangible rewards than in seeing how they can enhance their skills and knowledge.

ENGAGING MILLENNIALS

Change management also includes initiatives to target Millennials. The number of Millennials at Wipro is growing, and the organization recognizes that it needs this group engaged in KM. According to Reddy, Millennials are not particularly interested in reading documents and want different ways to engage in knowledge transfer and sharing.

The KM team has identified storytelling, video- and audio-based content, mobile access to content, analytics-based knowledge repositories, and social media collaboration as trends to involve Millennials in KM.

The key technique the organization has embraced to engage this audience is gamification. According to Reddy, gamification helps drive desired behaviors within the work force and provides a platform to share knowledge. Wipro’s games are mostly offline and are modeled after sports such as arm-wrestling, marathon running, and cricket. Each game is
designed to help employees build their skills, enhance their knowledge, and make it easier for them to share knowledge.\(^8\)

The organization also uses mind maps to help employees brainstorm what the KM team can do to enhance the organization’s portfolio of KM tools and approaches. As part of a mind mapping exercise, employees respond to specific questions and submit ideas about what they expect their knowledge needs to be in the future, how they would like to participate in KM, and how they might collaborate better on projects.

### Ensuring Knowledge Is Applied and Used

Wipro has made participation in some KM initiatives mandatory for certain projects. This ensures that project teams are not only capturing critical knowledge, but also making the knowledge they capture available for reuse. The following KM processes are mandatory:

- known error database for all managed service projects,
- SHINE framework for every new person coming into an account,
- customer account portal for new projects and projects in transition, and
- collection of best practices and lessons learned for closed projects.

### STEPS TO ENSURE KNOWLEDGE IS REUSED

Wipro’s key approaches to promote knowledge reuse are its known error database and SHINE framework.

The known error database contains solutions from past customers and projects. Accessing and leveraging this knowledge allows employees to adapt preexisting solutions to meet current project needs. By pulling relevant information from the database, employees can avoid rework and decrease the amount of time required to deliver solutions to customers.

The SHINE framework is considered Wipro’s flagship KM product for new hires. When an employee is added to a project or account, he/she goes through the SHINE process to learn about products and technologies and then apply that knowledge. The steps in the SHINE process follow:

- **Seek**—employees learn about relevant project areas with minimal assistance from a mentor;
- **Hands-On**—employees learn by taking on various work assignments and interacting with a mentor;

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\(^8\) Additional information on Wipro’s gamification initiative can be found in *Using Gamification to Enhance Knowledge Sharing, Collaboration, and Learning at Wipro Technologies*.
Transferring and Applying Critical Knowledge

- **Interact**—employees are encouraged to ask questions during learning sessions, web chats, and other activities;
- **Network**—employees join relevant networks and learn from the experts in those networks; and
- **Enrich**—employees who have the same knowledge needs learn from one another with the help of a mentor.

In addition to these two approaches, Wipro uses a project performance analysis process to document success stories around knowledge application and reuse. Project managers undertake these analyses to show how their teams practice and apply KM in their daily work. The process measures KM adoption at a grassroots level and ensures that projects are moving in the right direction. Each project manager is responsible for keeping track of best practices and ensuring that relevant knowledge is published to KNet.

**MEASURES/INDICATORS FOR STRATEGY EFFECTIVENESS**

Wipro maintains a KM dashboard where it displays engagement and effectiveness indices used to gauge the success of its tools and approaches. The engagement index tracks how often the organization’s KM tools and approaches are used each month. This data reveals how Wipro’s business units and service lines leverage the knowledge and content available to them. The effectiveness index primarily monitors the business outcomes from projects. This includes content that was created, revenues, and feedback from customers and employees.

The KM team also uses a formula to look at the business value of KM. It measures employees’ KM use and how that affects their effort deviation. For example, data was collected from 230 projects based on information in Wipro’s project management tool e-Cube. The team has used this to see how KM affects productivity. The analysis shows that, when dispersed teams use KM, they are able to deliver projects early or on time more often than teams in a central location. The KM team also looked at the difference in effort deviation between employees with less vs. more experience when either group uses KM approaches. The data indicates that employees with more experience only slightly lessen their effort when they use KM. However, employees with less experience are able to decrease their effort dramatically.

Along with effort deviation, the organization measures productivity gains from two of its KM products, the SHINE framework and the known error database. Before participating in SHINE, teams took almost 30 hours to resolve customer issues, whereas after SHINE, the teams reduced their cycle time down to 12 hours. The known error database resulted in similar gains, with the average cycle time to resolve issues decreasing from 112.5 hours to 89.8 hours.
Critical Success Factors and Lessons Learned

According to Reddy, Wipro’s overarching KM goal is to ensure that, any time employees have knowledge or collaboration needs, they automatically think Wipro’s knowledge base has what they need. Employees should feel excited and passionate about the learning and sharing opportunities available through KM, rather than looking at participation as just another work initiative.

With this goal in mind, Reddy shared a number of critical success factors and lessons learned from implementing and evolving Wipro’s KM program. Wipro’s KM critical success factors include:

- **the known error database**—Wipro sees not only business benefits in terms of increased productivity, but also customer benefits from Wipro’s ability to deliver faster solutions;
- **knowledge-sharing sessions**—these sessions provide learning opportunities for employees at all levels;
- **premium content**—marking certain case studies, best practices, and reusable components as “premium” helps employees quickly pinpoint the best resources;
- **the KM dashboard**—this tool provides access to management reviews and helps the organization maintain its focus on sharing and collaboration; and
- **customer collaboration and reviews**—Wipro also gets value from the content used by its customers and relies on this content to boost customer satisfaction.

Wipro’s most important lesson learned is that KM cannot be a one-size-fits-all approach. Different employee populations have different knowledge needs, and specific accounts and projects may have their own unique needs. Wipro now takes this into account when putting together its KM initiatives, creating tailored content and portals for each segment of the work force.

Over time, Wipro’s vision and strategy have shifted to focus more on people, especially customers. The organization has to have a robust content management process in place to ensure that customers’ intellectual property is protected. This is why the content publishing process includes both a reviewer and a content quality team.

Millennials are seen as an important segment in Wipro, and getting them engaged requires innovative approaches such as gamification. Because the Millennial population is growing so quickly within Wipro, their knowledge needs and approaches will naturally drive the organization’s KM strategy in the future.

Wipro recognizes that employees may not know where to look for specific content resources; that is why the visibility of content is important. The organization put the KM
taxonomy in place to make it easier to search KNet and ensure that employees can find the content they need.

With all the initiatives Wipro has put in place, the organization strives to deliver relevant content directly to employees. This way, employees know where to go to find the latest blogs, case studies, knowledge-sharing sessions, and other resources to enhance their knowledge.
About This Research

The research in this report was collected using APQC’s award-winning collaborative benchmarking methodology. The process began in early 2013 when APQC compiled a list of potential best-practice partner organizations based on previous research, APQC’s extensive knowledge of KM programs, and recommendations from the study sponsors.

After assembling a list of more than 50 potential best-practice organizations, the APQC study team conducted a multistep screening process to refine the list and identify the most suitable candidates. First, APQC approached each organization on the target list to assess its interest in and qualification for participating as a best-practice partner. Then, team members conducted telephone interviews with the process owners at a subset of qualified and interested organizations to better understand each organization’s processes and practices and determine whether it was a good fit for the scope of this research. Ultimately, APQC selected six organizations to serve as best-practice partners and presented them to the sponsors during the study kickoff conference call in June 2013.

As part of this research, both partner and sponsor organizations participated in a detailed questionnaire designed to collect quantitative data on their knowledge capture, transfer, and reuse approaches. APQC also conducted a virtual or in-person “site visit” with each selected partner. Key leaders from the partner organizations hosted the site visits in accordance with a discussion guide supplied by APQC. Representatives from the sponsoring organizations provided valuable input into the design of the site visit discussion guide and participated in the site visits. The APQC study team prepared a written case study of each site visit and submitted it to the partner organization for review and approval. The final case studies are provided as part of this report.

SUBJECT MATTER EXPERTISE

Darcy Lemons, Senior Project Manager, APQC

Darcy Lemons is a senior project manager with APQC’s advisory services group. During her 13 years with the organization, she has led most of APQC’s more than 25 benchmarking studies focused on best practices in KM, covering topics such as retaining critical knowledge, communities of practice, Web 2.0 for KM, KM and innovation, and lessons learned strategies and processes.

Most recently, Lemons served as a subject matter expert for APQC’s 2012 study “Putting Knowledge in the Flow of Work” and a special adviser on APQC’s 2011 study “Improving the Flow of Knowledge in Product Development.” She has also acted as the project manager for APQC’s KM Advanced Working Group, now in its seventh year. In 2003, she co-authored APQC’s Capturing Critical Knowledge from a Shifting Work Force.
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A special thank you is extended to the representatives from the six best-practice organizations who took time out of their busy schedules to participate in this study. The representatives received no compensation or reimbursement for their time or travel. Each member of the partner group went out of his or her way to guarantee the success of this study.