Unlocking the Value of Knowledge Transfer: Create Extraordinary Value from What Your Company Already Knows

Abstract

The big question is: will you have the thought leaders with the knowledge and skills needed to run and grow your business?

This white paper describes how effective knowledge transfer can create extraordinary value in your critical business metrics while helping to ensure that your workforce has the capabilities, expertise, flexibility and resilience to adapt to change and thrive versus your competition.

Introduction

The aging workforce with looming boomer retirements, anticipating dire consequences as important knowledge walks out the door has been a topic of discussion, often with only minimal planning. The exodus is underway, but poor personal financial planning has caused many boomers to delay their departure. You might be breathing a sigh of relief that your company has been granted a window of opportunity to mitigate against knowledge loss risks and deal with more pressing issues. Are you using the next few years to get prepared?

At the same time, there is a growing concern about a skills gap in many of the younger hires joining your company. According to the American Society for Training and Development (ASTD)\(^4\), a critical skills gap exists when a company has difficulty growing and remaining competitive due to its inability to fill critical jobs with employees having the necessary skills and knowledge. There are two underlying causes: lagging education in the school systems and short job tenures as Millennials change jobs every few years to build their resume.

The following are a few common situations that benefit from Knowledge Transfer

- Experts or executives about to retire with no experienced replacement
- Need to reduce process costs or cycle time, grow revenue, improve customer service or innovate
- Accelerate merger integration – get new employees productive quickly

Business Case

As a business manager you face many challenges in meeting objectives such as aligning team goals to strategic plans; delivering targeted business results; addressing safety, reliability and other compliance directives and increasing workforce performance – all of which must be done within tight budgets and timelines. The toughest challenge may be to ensure that your team has the training and know-how to deliver the high-quality results necessary to achieve your business goals and metrics. And that’s just your day job.
Corporate restructuring, hiring, mergers and acquisitions or plans to reduce costs by adding resources in low-cost geographies create additional needs to get new employees up to speed rapidly. Do not forget the boomers; once their investments recover, they will start retiring at a faster pace. You need to make sure their departure does not leave gaps in the critical knowledge and skills you need to run and grow your business.

These scenarios have at least one thing in common: a requirement for cost-effective ways to transfer knowledge from those who have it to those who need it. This need has never been greater. Are you getting practical and effective guidance on what to do from your company’s HR or Knowledge Management (KM) groups?

**Valuing an Individual’s Know-How**

Let’s start with a few definitions:

- **Knowledge** is an understanding of facts and principles – typically what you learn in school.
- **Know-How** is the ability to apply relevant knowledge and experience to do work or solve problems.
- **Knowledge Transfer** combines processes, technology, and reinforced behaviors necessary to get the right information and expertise to the right people at the right time so they can act effectively and make good decisions. It is the action that drives knowledge management.

Knowledge is a necessary ingredient for high workforce performance, but it is not enough. You also need seasoning in the form of experience that applies the knowledge in real work. The combination of knowledge with the ability to apply it effectively is called know-how, and it typically takes many years of practice to develop.

The difference in effectiveness of knowledge and know-how can be illustrated by comparing a medical intern to a surgeon with ten or more years of practice. If you need an operation, you’re more likely to choose the know-how of the surgeon over the intern’s up-to-date knowledge from the latest medical journals. When an employee already has significant know-how, new knowledge can be quickly learned and put into action. Novices lacking this experience will be unable to apply new knowledge as quickly.

Even though a generally recognized quantitative description remains elusive, most people believe that knowledge and know-how has business value. For this discussion, let’s use a simple metric for knowledge: revenue per employee (total income divided by total number of employees).

Know-how grows over the course of a career. There are a few common milestones along this journey such as novice, competent performer, expert, and master. Think about the learning journey of new hires. They enter your company with a good formal education and are up-to-date on theories and principles. It normally takes them a year or two of training to understand company processes for getting work done and to become productive novices. The revenue breakeven point (i.e., the length of time it takes a new employee to begin generating a positive cash flow after covering salary and training costs) will depend on how fast they learn and the nature of their job assignments. Positive cash flow may not
occur until several years after hire. Perhaps an additional three-to-four years of increasingly challenging job experiences will make them competent performers who are comfortable with company processes and able to deliver quality work with a minimum of supervision.

A commonly accepted benchmark is that it takes an employee seven-to-ten years of concentrated work and study to become a subject matter expert in a field; able to work independently, make novel contributions, and have a broader impact on the business. A small number of employees continue to work in their field for many additional years, becoming masters with deep experience and significant analytic skills. Masters are critical for keeping your company competitive. They are the thought leaders for the company and their industry through innovative contributions to their field.

The difference in knowledge between the novice and the expert is visible and measurable by the value of their contributions. For example, in a Wall Street Journal article, Alan Eustace, Google’s vice-president of engineering, said that one top-notch engineer is worth 300 times more than an average engineer in terms of the value they can generate. Revenue contribution is directly related to know-how: the employee’s knowledge, skills and experience. The development of this capability can be illustrated by learning curves in Figure 1 that show the speed and depth of know-how development.

![Figure 1. Learning Curves](image)

The Know-How axis is divided into intervals that correspond to competency milestones. A typical employee’s learning curve is illustrated with the solid black line (“Normal”). The exceptional employee’s learning curve – as shown by the dashed blue curve – rises faster and reaches a greater depth of know-how. The gap between these curves is an indication of the greater revenue delivered by top-notch employees.
Effective knowledge transfer can make a significant and measurable impact on all of the challenges described above. For example, it can shorten a new hire’s time to positive cash flow (after recovering salary and training costs) by accelerating early career learning as shown by the dashed red learning curve. This enables employees to handle meaningful work more quickly with less supervision (which is exactly what Gen Y is asking for). Teaching employees about the way your top experts think can accelerate competency even further (see “Power of the Mental Model” below). Effective knowledge and know-how transfer can increase the productivity and performance of your staff to levels approaching that of your best practitioners and reduce business risks or disruptions by identifying and transferring critical expertise before key staff leave. Business benefits of effective knowledge and know-how transfer can be measured via increased revenue, reduced costs, spurring of innovation to create new products and services, and increased customer satisfaction.

**Effect of Retirement and Millennial Crew Change on Human Capital**

Major shifts in workforce demographics are underway. With economic recovery, Boomers are beginning to think seriously about retirement or job change. Meanwhile, the Millennial (Gen Y) generation will swell to 50% of the workforce by 2020. What affect will these changes have on your organization’s human capital?

Two predictive factors for human capital are work experience and job tenure. Work experience measured as the total number of years of work is a fairly obvious component. Over a long career, individuals will gain a wide range of skills and experience. Additionally, a long work history develops knowledge about general business and specific industry practices, and useful experience with how “work gets done” in an organization. This improves the ability for making good decisions.

Job tenure is a measure of how long a person works for a specific company or in a specific role or function. Studies have compared typical job tenure of Boomers, Gen X and Gen Y. Millennials have a very short tenure, tending to work 2-3 year “gigs” for one company before moving on to new opportunities. Boomers have greater longevity in a specific position, averaging about seven years. In addition to longer average job tenure, many Boomers have spent much of their career (10-20 years or more) becoming experts or thought leaders in a specific discipline. Millennials do not seem to be following this pattern. As organizations trend towards a contractor-based workforce (the “gig” economy), this tenure factor will become even more significant.

We define “human capital factor” (HCF) as the product of work experience and job tenure. The longer a person works, and the longer that work is in a specific area, the greater will be the person’s expertise and impact on business results. The shorter work history and job tenure of Gen Y suggests that their human capital contribution will be less than that of the experienced staff. Over the next 10 years, HCF will drop significantly (20%) in the U.S. workforce (Figure 2)
The impact of the crew change is more severe in established industry sectors such as energy, manufacturing and healthcare. Figure 3 illustrates a ten year forecast of demographic changes due to hiring and attrition for a large manufacturing company. The age distribution over time shows a significant shift in Millennial and Boomer employee population. The loss of human capital (“corporate IQ”) is significant while the safety risks and work complexity are increasing.
Not only is your workforce being squeezed at both ends, there are plenty of other forces reshaping business in the 21st century. Examples include: globalization, increased competition, growing emphasis on knowledge work, critical skills gaps in technical jobs, less training and experience, generational diversity, environment and safety concerns, virtual teams, outsourcing and contractors, information overload, and social networking. How will these forces impact your company’s strategic plans and business goals?

**Measuring the Business Value of Knowledge Transfer**

Many efforts have been made to determine the value of knowledge. Such efforts range from estimating the contribution of intellectual capital “intangible assets” as part of a company’s book value (see: Sveiby, Edvinsson, and Stewart) to the “Learning and Growth” metrics of Kaplan & Norton’s Balanced Scorecard.

What really matters is how knowledge transfer impacts your bottom line in terms of your organization’s business metrics as shown in Table 1.

<table>
<thead>
<tr>
<th>Common Business Metrics</th>
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<tr>
<td>• Cost reduction</td>
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<td>• Cycle time reduction</td>
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<td>• Increased revenue or gross margin</td>
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<td>• Percent of sales from new products/services</td>
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<td>• Business growth</td>
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<td>• Increased customer retention/satisfaction</td>
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<td>• Increased employee retention/hiring/satisfaction</td>
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<tr>
<td>• Accelerated competency/workforce performance</td>
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Table 1. Metrics

Business value from actual knowledge transfer projects in several large energy and manufacturing companies has been reported. Examples include:

- Operating cost reduction ($2 billion annually)
- Energy savings ($1 billion)
- Global manufacturing operations cost savings ($100 million)
- Exploration and production operations ($50-250 million) cost reduction
- Manufacturing best practices in assembly line process time saved ($1 billion)
- Drilling process time reduced by up to 50%
- World-class safety performance

**Knowledge-Sharing Networks**

In “Too Big to Know”, David Weinberger presents the case that business, science and the government are learning how to use networked knowledge, the internet and crowdsourcing as sources to
understand and manage growing complexity and make smarter decisions than they could when relying on individual experts. This is a growing concern in the years ahead as Boomers retire, taking decades of knowledge and experience when they leave; and Millennials, making up 50% of the workforce by 2020\(^3\), enter with gaps in STEM knowledge, problem-solving, teamwork and critical thinking skills.

Weinberger is right: the smartest person in the room no longer has sufficient experience to handle increasingly complex cognitive tasks. We have to rely on the room itself – the collected expertise of the workforce who have acquired a wide range of experience over their years of work.

This concept is embodied in a Knowledge-Sharing Network (also called a Community of Practice). This important knowledge transfer method enables collaboration among people who are interested in a similar topic (e.g., discipline, process, practice) to share what they know, learn from each other, improve the way they work and deliver value to members and their organization. Effective networks are not ad hoc groups. They are supported by a business sponsor, have well defined roles and responsibilities and a charter that defines goals, relevant business metrics and a technology platform to facilitate sharing and reuse.

The most critical success factor is for leadership to reinforce behaviors to seek, share and adopt are a critical success factor. There are three important roles that need to be engaged. The experienced worker should look for opportunities to teach. The Millennials need encouragement to ask questions and look for training opportunities. Managers are accountable for recognizing the desired behaviors and developing their team’s capabilities.

Most networks are facilitated by technology that permits members to ask and answer questions, find others with specific expertise, share practices and lessons learned and contribute experience and insights that help all members increase performance. An example “state of the art” SharePoint tool is described below.

Shared process or product insights and incorporation of past lessons learned can result in significant time and cost savings. This knowledge flow can be augmented by linking retiree, vendor and academic resources. Senior management sponsorship and promotion of the networks is a critical success factor in establishing engaging members and delivering value.

Several knowledge-sharing networks are described below.

**Manufacturing Problem Solving**

After a merger, a large oil and gas company more than doubled the size of its refining system. Prior to the merger, the U.S. refineries received technical help from a small team of experienced process engineers. This support was not sustainable for the new organization. We linked all of the refineries into a large, technology-supported knowledge network.

Over 2,000 operators and engineers, who are globally distributed across 16 sites, are able to ask for advice and share successful practices regarding day-to-day manufacturing operations. Supported by an email-enabled “Question and Answer” collaboration tool (Figure 4), they get answers in hours instead of
weeks. These solutions and ideas add to a continually expanding, searchable knowledge base that can be tapped to handle future situations. It also helps technical experts pinpoint multiple instances of events that can trigger evaluation and development of effective practices to improve operations.

People asking questions are prompted to summarize how they solved their problem and provide an approximate estimate of time and cost savings. More than US $100 million in savings has already been documented. Another such system supports Q&A between oil exploration staff and production staff. Similar success stories are collected on a regular basis.

![Image of a knowledge management system]

**Figure 4. Refining Knowledge Network**

**Oil Drilling – Team to Team Knowledge Transfer**

Drilling for oil is a very expensive process. Multiple wells are drilled in a single field over a period of time, but the original drilling team has probably been reassigned to other projects. By following a standard process and carefully documenting each step in the work (e.g., the type of rock encountered at various depths, the type of drill bit and drilling fluid that cuts best through a specific rock layer), the team leaves an important legacy for their successors. This team-to-team knowledge transfer dramatically reduces drilling time and saves a lot of money on subsequent wells.

Figure 5 illustrates a knowledge model for drilling teams. This can be used for both a specific reservoir and as a team-to-team vehicle for sharing practices and lessons. Each drilling operation needs detailed information about the underground geology and drilling rig components. Such a system can be used to record actual experience such as rock structure penetrated, bits and fluids that work effectively. In Figure 5, these lessons are captured in a drilling log and “tagged” to corresponding components of the drilling process model for quick reference.
The team-to-team knowledge transfer dramatically reduces drilling time and saves a lot of money on subsequent wells. Figure 6 documents several learning scenarios as a reservoir is drilled many times over multiple years with different crews.

When nothing is transferred to future teams you see “no learning”, an almost random amount of time to drill the well based on the skills and experience of the current team. When experiences are carefully documented and available to subsequent teams, it is possible to achieve a tremendous time savings. In the “fast learning” example, the time to drill is cut in half. At $250K per day and up, this can save $10 million for the well. The final scenario shows that the documentation isn’t the whole solution. When
experienced engineers are no longer available to translate the past experience to daily operations, the drilling time can revert to “no learning”.

**Business Analyst Know-How**

The business analyst (BA) role is critical to many projects and successful IT applications. The range of knowledge covered by this discipline is huge. One of the first deliverables of the BA Knowledge Network was an internal curriculum for company-specific skills, processes, tools and templates. This work resulted in a robust competency model that has become part of the corporate learning and development system. Serving as the steward of their discipline’s knowledge is a very important role. A growing number of Knowledge Networks are tapping the brains of their skilled practitioners to develop global standard practices for key operations and processes. By fostering this consistent approach they are raising the performance of the global workforce to the levels of their best practitioners.

**Expert Knowledge Elicitation**

What do you do if your expert on product quality with 20 years of experience tells you he plans to retire in two months and you realize that nobody else is ready to take over? In six weeks we were able to elicit a step-by-step process and identify the key elements of this expert’s “mental model” that made his thinking clear in each step. The successor, a recently graduated chemist hired several months after the expert left, found the explicit knowledge absolutely invaluable. He was able to perform competently after just a few months on the job.

Results like these are what you should expect after you have added tools from the knowledge transfer playbook to your repertoire. Some processes such as Knowledge Network or Q&A are relatively easy to implement. However, other processes such as Knowledge Elicitation require more skill and experience. With a good teacher, you can learn to successfully deploy all such processes in your company.

**Accelerating Know-How**

In 2006, Schlumberger’s Business Consulting group began a series of studies on the development time of petro-technical professionals (e.g., geologists, petro-physicists, drilling and reservoir engineers). Since these disciplines were in short supply, Schlumberger was looking for effective ways to accelerate competency. They targeted the “point of autonomy”, the time it takes for a new practitioner to be trusted to handle complex work independently and able to make non-standard technical decisions.

They found that they could distinguish two learning philosophies: conventional and innovative. Smaller companies tended to focus on traditional learning methods such as classroom training. The innovative companies invested more on blended learning such as providing early on-the-job experience, job rotation, and engagement strategies. They also used knowledge transfer methods in a big way such as rehiring retirees as mentors, coaches and experts and participation in knowledge-sharing networks.

As shown in Figure 2, the innovative approaches were able to reduce the time to autonomy by six years compared to the conventional 10-12 year development period. Better training and the use of knowledge transfer methods had a tremendous acceleration effect. As part of the early career
experience, companies focused on developing relationships between new cohorts and more experienced professionals (one of the outcomes of participating in networks). These relationships resulted in longer job tenure. Innovative companies also showed higher growth.

Figure 7. Effect of Learning Styles on Competency

These innovative practices align very closely to what Millennials are looking for from their organizations. They expect quick career growth and opportunities for development, and often consider these more important than compensation. These are exactly the kinds of practices that will increase retention.

**Mentoring and Knowledge Coaching**

A coach can further accelerate competency by providing feedback as the practitioner observes and interprets information, forms conclusions and proposes actions. The coach can also share additional, less common examples that add to the mentee’s knowledge. But if your company is like most, your experts are already fully engaged in projects or other assignments. You can’t afford to give them time for coaching. Or can you?

Not only are experts interested in serving as coaches in the later years of their careers (it helps to combat burnout), it is actually cost effective for your company to have them do this. Instead of being assigned to a single project, an expert can coach several junior practitioners, each of whom is assigned to a project beyond their current capability. With the expert in a coaching role, the project is guaranteed to have the best available knowledge. The mentee gains tremendous experience by doing the hand’s on work under the expert’s guidance and review. The expert is thus able to influence the success of several projects while accelerating the learning of several colleagues. (Note: this is also a great opportunity for retirees). You can provide a four-way win for your projects, the expert, the junior practitioners and the organization’s talent development.
The Power of the Mental Model: How to Think Like an Expert

Wouldn’t it be great if you could teach your employees to think like your best experts?

Expertise has three features: it must deliver performance that is consistently superior to that of other practitioners; it must lead to successful outcomes; and it must produce repeatable results. Ericsson’s research\textsuperscript{13} shows that expert-level performance is not a result of innate talent or genetics; it can be created by years of deliberate practice and coaching.

An expert seems able to observe a situation, quickly recognize relevant characteristics and almost immediately recall solutions that have worked in the past or even suggest a new approach by synthesizing results from several past experiences. Ericsson\textsuperscript{13} describes this performance as an ability to efficiently encode the knowledge of events and solutions using the most important domain-related concepts learned over years of practice. Rapid retrieval of solutions follows as they are able to filter out much of the situation’s information. Less experienced people take much longer to determine what really matters. These concepts form the expert’s mental model.

Experts performing cognitive tasks such as design, analysis and problem-solving are often unable to clearly articulate these key characteristics. We have found that an expert interviewer can facilitate expert knowledge elicitation. They can describe concepts and patterns of characteristics they have observed in both good and abnormal situations. This knowledge can be efficiently mapped and taught to less experienced practitioners, significantly reducing the customary years of trial and error trying to figure out what is actually important. The mental model is a useful framework, like the index for a filing cabinet. The learner still needs to do actual work to gain experience, but it is gained more efficiently. An example mental model for a gas-to-liquids process is shown in Figure 8.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{chemical_process_mental_model.png}
\caption{Chemical Process Mental Model and Metadata Tagging}
\end{figure}
Navigating through the model when searching for or posting new knowledge helps reinforce the relationships between key concepts. In a way, physically cataloging experience in the network mimics development of a personal knowledgebase of problems and solutions. Figure 4 shows a list of process control solutions that result from clicking relevant objects on the mental model. A new practitioner can see how the equipment is linked to process operations and product quality. The “Expert Knowledge” box describes important perspectives targeted during the expert’s interview process. Being able to understand and apply this operational know-how is critical to safe and reliable performance.

Domain comprehension and communication are improved by visual representations that provide contextual information and functional relationships between domain elements. Consider the common alternative organizing scheme for repositories: nested file folders based on text-based taxonomies. Which approach would help you understand better the big picture?

**Next Generation Knowledge Network Platform – SharePoint**

I’ve been working in the knowledge management space for decades and have seen many tools come and go. My favorite actually, was Lotus Notes. I used it to connect our global refineries to share knowledge in the system described in Figure 4. This was the first system we built incorporating metrics for cost and time savings. We captured over $100 million of value by solving refinery problems. Surprisingly, I am not aware of any current system that documents business value.

We have created a next-generation SharePoint Knowledge Network platform that incorporates many critical concepts described in Figure 9 and Table 2 below. Metrics of course. You can define whatever is relevant for your business. The knowledge map concepts are the metadata used for tagging knowledge contributions. All the concepts are visible and logically connected (not buried in subfolders). When members are looking for or uploading relevant knowledge, the knowledge map helps them learn how experts think about the subject. Also, using Microsoft Delve, network members can easily share their expertise across their organization. Annotated screenshots of the features are available.

![Figure 9. Next Generation Knowledge Network SharePoint Site](image-url)
Visualization (Concept Map, Influence Diagram)
- Search using a clickable Knowledge Map based on metadata from expert mental models
- Quickly find knowledge and people with relevant skills.

Member Profiles
- Automatically update your network skills in your Office 365 Delve profile
- Peer Recognition (including individual feedback and content ratings)

Business and Activity Metrics
- Capture and report metrics (e.g., cost savings, time savings, revenue, quality improvement) for all content
- Real-time activity metrics for content views and contributions

Content and Collaboration
- Knowledge Types: Q&A, Expertise/Best Practices, Lessons Learned, Meetings
- Use the built-in state of the art Q&A feature or embed Yammer
- Project Workspace

Other Features
- Mobile capable
- End-user configurable, no IT required
- Works with most SharePoint versions (including on-Premise and Online)

Table 2. Key Features of a Next Generation Knowledge Network Platform

Achieving a Sustainable Change in Workforce Performance

Knowledge and know-how transfer should not be considered a one-time reaction to the impending Boomer retirements; the need is universal and never-ending. The strategy presented here provides managers with proven ways to achieve significant, sustainable value by accelerating competency, raising performance, maintaining business continuity and developing the next generation of thought leaders. It will provide the right mix of processes, tools and skills to integrate knowledge transfer into your existing operations. The business benefits will align with your company’s business strategy and metrics, and the resulting knowledge-sharing behaviors will help your company remain competitive in the years ahead.

Getting Started

A good way to evaluate how knowledge transfer might help your organization is to set up a cross-functional exploratory team to identify critical knowledge risks and target opportunities. This core team should include business leaders, HR or KM team and IT. Leadership support will be critical to success and will help focus on business goals and reinforce the knowledge sharing behaviors described above. The HR or KM group will develop and support the knowledge transfer processes in the long term. IT will be important to enable sharing across the organization. The team will choose one or more pilot projects that align with important corporate objectives and measure the value.

Don’t reinvent the wheel: documented knowledge transfer processes and case studies exist. Seek help from someone who has “been there” with a proven track record of results to teach you how to get started.
Knowledge Transfer Game Plan

This section outlines a process to manage experts or executives about to retire with no experienced replacement.

Identify Experts & Critical Knowledge to Retain
A number of methods can be used to identify experts with critical knowledge that needs to be retained. The easiest way is simply to ask their managers and supervisors. More systematic approaches to quantify risks may be useful when managers aren’t certain about the breadth of critical knowledge needed to run their business or when they aren’t familiar with the expertise of all of the members of their workforce.

Identify Successors or Other Learners
A good succession plan identifies individuals who might backfill leadership and technical roles and creates plans to develop competency, build sufficient bench strength, and preserve an organization's institutional memory and specialized knowledge. Succession plans may be a good source for identifying recipients of expert knowledge.

Determine Knowledge Transfer Objectives
Knowledge transfer and retention has two high-level performance objectives: accelerating the competency development of less-experienced employees to become competent performers, and developing the next generation of experts and thought leaders who will keep your organization competitive. Not all know-how will be in scope for transfer. What specific capabilities do backfills need to know for current and future needs?

Select Knowledge Transfer Methods
A list of effective Knowledge Transfer methods is presented below. Not all are relevant for a particular situation. We recommend appropriate methods based on the following factors:

- How much of the expert’s time is required for effective knowledge transfer
- How much of the expert’s time is available to work with a successor
- What degree of expertise the successor needs to have
- The depth and complexity of the knowledge
- The ability of the expert to articulate the knowledge
- How many people need to be developed

Develop/Execute Knowledge Transfer Plan
Each of the listed knowledge transfer methods has a unique execution plan. It is useful to have someone facilitate the plan’s execution and document progress and results.

Measure Learner’s Performance
Specific metrics are a part of the selected transfer plan. One typical metric is that the successor can do the expert’s work meeting customer expectations. The metrics provide evidence that knowledge transfer has been successful.
**Knowledge Transfer Methods**

Table 3 describes a number of practical and effective knowledge transfer methods based on my decades of experience in a global Fortune 5 corporation. They are part of a comprehensive playbook that has been used effectively to develop individual expertise as well as broader corporate knowledge such as best practices and lessons learned. Each method has characteristics that make it more suitable for specific knowledge transfer scenarios.

Factors for selecting the most relevant methods include: how long the expert is likely to be available and how much time can be committed, the target competency objective of the learner (competent or expert), how many people need to learn, the depth of the subject knowledge (principles and theories, operational practices, or highly cognitive tasks), and the ability of the expert to articulate the expertise.

<table>
<thead>
<tr>
<th>Knowledge Transfer Method</th>
<th>Description</th>
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<tbody>
<tr>
<td>Knowledge Handover Checklist</td>
<td>Used by manager and incumbent to identify important information the successor needs to know in order to get up to speed. Topics include: team's business context, job roles and responsibilities, work processes or projects, information sources, key contracts, and how performance will be assessed. These topics form the core for many other knowledge transfer methods.</td>
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<tr>
<td>Master Class</td>
<td>A learner presents a challenging problem to the expert in a group setting. Other participants observe and ask questions as the SME discusses the learner’s situation. The SME provides strategies, theories, techniques, best practices, common errors, and stories related to the problem based on personal experience.</td>
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<tr>
<td>Q&amp;A</td>
<td>This social networking process enables a person struggling with a problem to ask questions and quickly receive answers from a group of practitioners in a discipline or domain. The process is usually enabled by collaboration tools or email.</td>
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<td>Conversation with the Expert</td>
<td>Colleagues submit questions for an expert which are to be answered in a meeting or teleconference. During the session, follow-up questions are possible. The session may be recorded, transcribed and organized for easy retrieval of information nuggets.</td>
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<tr>
<td>Community of Practice</td>
<td>A group of practitioners in a discipline that connect to seek and share experiences, develop and adopt practices or tools, and provide support for a learning agenda.</td>
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<td>Peer Assist</td>
<td>Experts share experiences and knowledge in a facilitated meeting with a person or team that is looking for advice on a challenging problem or project.</td>
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<td>Job Shadowing</td>
<td>Opportunities for a learner to observe the SME interacting with others or doing more complex work. Includes setup and debriefing discussions.</td>
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<td>Technical Mentoring</td>
<td>A structured approach that helps an SME to break work into teachable moments, with assessment in order to demonstrate measurable learning. The learner increases their ability to do more complex work while gaining an insight into the SME’s thinking.</td>
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<td>Guided Experience</td>
<td>Carefully selected projects or work assignments that fill gaps in experience or broaden and deepen targeted skills. “Guided” involves active SME observation and feedback as the work is performed.</td>
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<td>Knowledge Coaching</td>
<td>Combines mentoring, shadowing and observation to identify the learner’s competency gaps and guide their development via timely performance feedback. The SME enables the</td>
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learner to work on projects that are above their current skill level in order to accelerate learning while cost-effectively ensuring that the project is successful.

**Team-to-Team Transfer**

Some complex, structured projects have many unknowns at the outset. If a team is able to capture learning in an accessible repository during the project, this knowledge can be reused by the team for a subsequent project or it can be handed off to another team in order to significantly accelerate their work.

**Knowledge Elicitation**

Interview-based approach with SME(s) to articulate big picture, mental models and detailed “how to” and “when to” guidance. Scope can cover a single expert or a group.

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<th>Table 3. Proven Knowledge Transfer Methods</th>
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**Summary**

Your organization’s knowledge can create extraordinary business value. The risks of knowledge loss are increasing but can be mitigated. Knowledge-sharing networks incorporating next-generation concepts are an excellent way to capture and transfer expertise and accelerate workforce performance. They track associated business metrics to demonstrate the benefits to the business and to workforce performance. Knowledge transfer processes and tools are necessary but not sufficient. To be successful, you need to reinforce behaviors for seeking, sharing and re-using knowledge.
References


