

Deep Smarts: how to Cultivate and Transfer Enduring Human Wisdom

By Dorothy Leonard & Walter Swap
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Dorothy Leonard and Walter Swap are well known knowledge management scholars. In this book they explain how organizations can develop and share expertise.

Inside most organizations, there are people with deep knowledge and expertise. They can quickly analyze complex situations, recognize patterns and make intuitive decisions that fetch good results. What makes these people valuable is their deep smarts, experience based wisdom. Deep smarts are built on first hand life experiences that result in tacit knowledge. Such knowledge is difficult for others to replicate.

As the authors put it, “Deep smarts are as close as we get to wisdom. They are based on know-how more than know-what, the ability to comprehend complex, interactive relationships and make swift, expert decisions based on that system level comprehensions but also the ability when necessary to drive into component parts of the system and understand the details. Deep smarts cannot be attained through formal education alone but they can be deliberately nourished and grown and with dedication, transferred or recreated”.

Deep smarts are influenced by who we are and the people surrounding us. Deep smarts are acquired through our own experience as well as by learning from others who have such experience. Deep smarts are shaped, often subconsciously, by our beliefs, assumptions and convictions.

Deep smarts score over novices in various ways. To start with, they know more. They are wiser, thanks to their rich repertoire of experiences. They also know how to make quick decisions. They know how to apply knowledge with suitable customization in a given context. They know how to extrapolate their knowledge to new situations. Due to their rich experience, deep smarts can see in situations small variations that would escape the novice. They are also more aware of the boundaries of their knowledge than novices. So they can more easily identify a rare event.

Deep smarts have to be built and transferred to address knowledge gaps in the organization. A knowledge gap is nothing but the gap between what is known and what must be known to do a task with a reasonable degree of competence. People with less experience have knowledge gaps. In any field, it is often useful to distinguish between Novice (beginner), Apprentice (Advanced beginner, intermediate), Journeyman (Advanced) and Master (Virtuoso). Masters not only have more knowledge but they know how to use this knowledge differently. Transferring knowledge from the masters to others is the key challenge which many organizations face today.

The authors address some important questions in the book:

- a) How does experience build knowledge?
- b) How do we know that past experience is important for the future?
- c) When is broad experience important?
- d) When is depth critical?
- e) What are the substitutes for direct experience?

It is necessary to go through both common and rare experiences to develop deep smarts. Going through extremes (positives and negatives) is also an integral part of the education process. People with a limited range of experiences will find it difficult to acquire deep smarts.

Deep smarts are backed by frameworks, concepts and mental models. The human brain has to be conditioned to receive new information and make sense of it. Without the appropriate mental receptors, it is difficult to accept new knowledge. Both background knowledge and openness to new knowledge are needed. As the authors mention, "In order for someone to capture complex, experience based knowledge, the person's brain has to contain receptors to which the current inputs can be connected. Without these receptors, the new messages and information cannot be incorporated into the brain structures and remain relatively incomprehensible or meaningless. ..Information does not become knowledge unless it connects with something we already know."

Shaping Deep Smarts

Internal influences (self)	Knowledge Framing (Beliefs & Assumptions)	Knowledge Filtering (Social Influences)	External Influences (Other people)
	Knowledge Building (Experience & Expertise)	Knowledge Transferring (Coaching & Guided Experience)	

Acquiring Deep Smarts

Expertise takes time to develop. The decision to assemble deep smarts or grow them has strategic implications. A build strategy involves a dedicated effort to develop expertise by exposing individuals and groups of opportunities for direct experience over time. It is not always possible to grow all the expertise needed in house. Moreover, one individual may not possess all the expertise needed. In such cases, the expertise has to be assembled rather than grown.

There are different ways of assembling the required expertise. In some cases, the real value lies in plugging chunks of knowledge into an architecture. The components have deep smarts embedded within. Little attempt is made to modify them. In other cases,

knowledge is assembled from disparate sources but the components have to be modified before they are assembled. Components have to be combined, recombined and modified.

When expertise cannot be embedded in components, people have to be brought together. When a variety of people, each with deep smarts in different domains, is brought together, there is rich exchange of ideas and insights. Value comes from the creative “abrasion” and “fusion” which happen when different kinds of expertise interact. Of course, this process of creative abrasion has to be managed carefully.

Deep smarts depend on the extent of one’s personal and professional network and the knowledge contained within the network. The reach of the network depends on both serendipity and purposeful construction. Trust, mutual understanding and shared values are important for effective knowledge sharing. If we have a good network, we can access the deep smarts we need without having to navigate the organizational bureaucracy or pay the consultant fees. Even if we do not know the experts directly, we can access them through intermediaries. We can easily close the gap between us and the experts if we are sufficiently motivated.

Knowledge is not precise and definitive as is often perceived. Indeed, knowledge has been defined by some philosophers as justified true belief. Knowledge is subjective and is shaped/justified by many influences. Beliefs build up over time through both personal experiences and the influence of people around us. Beliefs can lead us to value certain kinds of knowledge over others and consider some assumptions to be more correct than those of other people. Beliefs also determine what we absorb from the environment. Our beliefs deliberately or subconsciously filter incoming knowledge from other people and test those incoming messages against what we believe. Beliefs in what constitutes success and in the strategies that lead to success originate in the early days of an organization and become entrenched over time. Beliefs build as part of deep smarts at a cultural level as well.

Beliefs form a kind of hierarchy. There are central/core beliefs, less central/peripheral ones and inconsequential ones. The more central the beliefs, the more difficult it will be for either the knowledge source or recipient to relinquish them.

Very often, the main stumbling block in acquiring deep smarts lies in getting rid of beliefs which stand in the way. How do we change deeply entrenched beliefs? One is by regularly challenging assumptions. A second way of affecting beliefs is by framing a situation differently. Since central beliefs are based on experience, contrary experience is most likely to alter a prior belief.

Social influences play an important role in the development of deep smarts. People get influenced by various mechanisms ranging from overt arm twisting at one extreme to more complex brainwashing at the other. Compliance with an expert may result in

superficial behavior change but little change in underlying beliefs and usually does not lead to development of deep smarts. Group pressures towards conformity influence people to change their behavior, even when they realize it is wrong to do so. Under conditions of uncertainty, emotions take over. Even otherwise, intelligent, strong-minded people, succumb to herd behavior. When we particularly admire or like a group, that group becomes our tribe and can exert a powerful influence shaping our central beliefs, behavior and knowledge. The importance of these social influences should not be underestimated while planning the transfer of knowledge.

To transfer knowledge effectively, coaches are needed. To be a knowledge coach, some level of expertise is needed. In addition, the coach should be skilled at dealing with less knowledgeable people. Expert coaches can mentor novices despite the major gap in knowledge level, provided they are willing to invest their time and the novices are willing to have their knowledge gaps exposed.

What kind of deep smart – novice combinations are effective? Self-selected mentor – protege teams tend to be more effective than appointed teams. Coaches by and large tend to look for people who are keen to learn. On the other hand, the proteges look for coaches who have experience, network and access to money and are available. Coaches need adequate motivation to enter into a mentoring relationship. For some coaches, the satisfaction of realizing how useful the deep smarts are, may be sufficiently motivating. But for others, explicit awards for the coaching activity may be needed. A coach-protege relationship is a partnership. Chemistry, i.e. the personal equation is important. Equally important is a basic agreement on the strategy to be pursued. If the two individuals involved do not agree on the broad direction, a venture or project should take, the relationship will sour. Alignment between coach and founder on company strategy is one of the variables which influences the success of the entrepreneurial initiative. Misalignment can occur because of lack of candour.

The extent to which the knowledge to be transferred is tacit, limits the ability of the coach to teach and the protege to learn. Tacit knowledge is difficult to articulate and sometimes may be too primitive to be well structured. Differences in thinking styles represent another barrier to knowledge transfer.

In knowledge coaching, there is almost always a large gap between the level of experience of coach and protege. So it is difficult to gear the teaching to the level of sophistication of the novice's receptors and build on the novice's prior knowledge. The greater the gap in expertise, the more feedback the expert may need in order to adjust the level of the presentation.

Different coaching techniques can be used depending on the situation and the personal predisposition of the coach:

- Directives/Presentations/Lectures.
- Rules of thumb

- Stories with a moral
- Socratic questioning
- Learning by doing or Guided experience – Guided practice/Guided observation/Guided problem solving/Guided experimentation.

At the lowest level of self directedness, the coach tells the protégé what to do and the learner has little to do except to pay attention and follow orders. Such a technique is useful if the protégé is experienced and can absorb the knowledge. It is also useful if the protégés are so inexperienced that telling them what to do is the most efficient way of transferring expertise.

At the next level, come rules of thumb. Coaches usually have a vast storehouse of patterns from which to draw. So they can transfer rules of thumb, i.e. compact statements that summarize a great many patterns into one simple, memorable and usually reliable rule. Novices often find rules of thumb useful shortcuts to more contextualized knowledge and coaches can rely on them to transfer knowledge quickly and efficiently. Sometimes the rule of thumb can be embedded in a cryptic analogy.

Story telling is another powerful technique for knowledge transfer. Relating stories based on past experiences can be an effective way of transferring lessons learnt from that experience. Such lessons are likely to be remembered. The more vivid the images evoked by the story, the more memorable the story will be.

Socratic questioning is another effective coaching technique. People often learn more when prodded to find questions to answers themselves. Questions can prompt the protégé to clarify and refine vague wording and thinking and challenge the underlying assumptions. If done properly, the Socratic method can engage the learner actively.

The best way of transferring deep smarts is by direct experience and discovery, when guided by a coach. Deep smarts essentially amount to wisdom. Instead of trying to transfer this wisdom, it is better to recreate the wisdom. Guided experience is clearly more powerful than other methods of knowledge creation and transfer. Directed action captures the essence of deliberate practice. By reflecting on their experiences, the protégés learn deep. The protégés get training in distilling knowledge out of observations.

Guided problem solving and guided experimentation are other ways of transferring deep smarts. Guided problem solving requires active engagement from the protégé. The protégé learns how to approach the problem. Under conditions of uncertainty, there is a need to experiment. The coach can help the protégé think about how much resources should be devoted to the experimentation, how bounded it should be and how to think about experimentation in general. Experimentation builds experience, rapidly and systematically. Experiments yield knowledge and the individuals who conduct them, think in terms of options for change.

Expert advice cannot be relied on in all situations. Experts may know more than they can explain or articulate. So there are serious difficulties in transferring expertise. The domain itself may be so new or underdeveloped that it may be very difficult to give reliable advice. There may be no clear patterns in the past to which the expert can compare the present situation. The value of expertise may also reduce due to ignorance, overconfidence and failure to examine well entrenched, underlying assumptions. When the situation is unique and exceptional and experts do not have the required knowledge, they may access incorrect patterns from their experience. Sometime the experts may be so overconfident that they may try to fit the problem into what they know without validating the assumptions and actions involved. Their display of invulnerability and infallibility may hardly be justified by the knowledge they actually have about the new situation. In some cases, experts also find it difficult to break away from the familiar and comfortable.

But whatever be the case, the fact remains that there is an acute shortage of deep smarts today in the corporate world. Deep smarts are difficult to transfer because they involve pattern recognition which in turn depends on experience and deliberate practice. Such expertise can be transferred only gradually and slowly. Organizations often try to move in a tearing hurry. This is not desirable. The transfer process must proceed at a reasonable pace. The human dimension is extremely important. Technology can help but only to a point. IT companies should take note of this point.

Learning is not always a formal or deliberate process. Formal instruction and online courses cannot meet this requirement. Deep smarts develop continuously, at work, in leisure, during parties and meetings. The more consciously we design our own experience and that of those individuals who need to move up the ladder of expertise, the deeper the resulting smarts.