
The changing face of knowledge

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Abstract

A change is occurring in how people think about who in the organization has credible and valuable knowledge that the organization can use to solve its difficult problems. This shift is a movement away from the idea that knowledge is found only in a select group of experts or "best" practitioners and toward the idea that useful knowledge is distributed throughout the whole of an organization. Knowledge-sharing systems at Ford, British Petroleum and Lockheed-Martin reflect this change.

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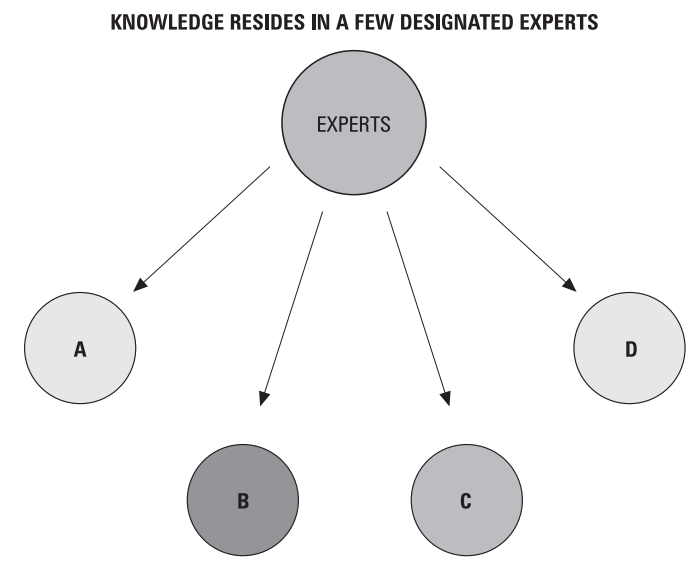
All of the interest and work in organizational learning over the last ten years has certainly changed organizations. As the articles in this issue attest, it has changed how organizations function, what they do, and the culture they create. Some would even claim it has increased organizational effectiveness and enhanced competitiveness. However, the most profound change, from my perspective, is the change in how people think about who in the organization has credible and valuable knowledge that the organization can use to solve its difficult problems.

This shift is a movement away from the idea that knowledge is found only in a select group of experts or "best" practitioners and toward the idea that useful knowledge is distributed throughout the whole of an organization. I call this a "shift" but "shift" may not be an accurate term because shift implies leaving something behind and taking up something else. It may be more accurate to say that our understanding of who in the organization has credible knowledge is becoming broader and more comprehensive. However, I want to stay with the idea of a shift for a bit, because it will allow me to contrast the two views in a way that may be helpful to making this broader view more comprehensible.

In the past, if we were to ask top management in an organization where the organization's critical knowledge was, they would probably tick off a list of employees who they considered experts in those areas of competitive importance to the organization. In an oil company, that might be the people who knew the most about a topic like horizontal drilling or refinery maintenance; in manufacturing it might be a person who knew the most about product and process flow. If the organization was facing a really tough problem in one of those areas, management might put together a task force of the experts from around the company to come up with a solution. Once the task force had completed its work, management would send the identified solution out to be implemented by those who were less "in the know". The flow of knowledge would look something like Figure 1. It would move from the experts to those who were less expert. I will label this way of thinking about who has knowledge the "expert model".

I could, in fact, use the same model to reflect knowledge moving from a manager to subordinates or from a professor to students.

Figure 1 The “expert model”

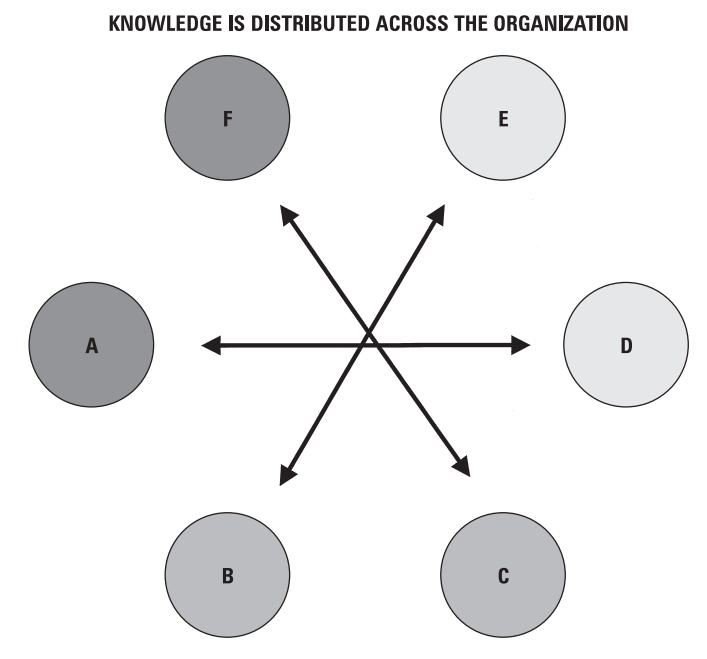


In each of these situations there is some individual or group who carries the organization’s approbation and others who are expected to emulate the expert group.

Ten years of focus on learning and knowledge has begun to evolve a different mental model within organizations – one that views knowledge as widely distributed across organizational members rather than as residing in only a small number of experts. In addition, this newer model views knowledge as abundant rather than as scarce, and as possible to develop in-house rather than needing to be brought in from outside. I found compelling evidence of this changing perspective over the last two years while I was studying the knowledge-sharing practices of organizations. I found that the most successful of these efforts did not start by trying to identify who was doing some critical practice “the best”, rather they started from the assumption that nearly every team was doing something that others in the organization could make use of – and likewise could themselves use what others knew. These knowledge transfer systems were designed to facilitate a give and take among peers. I could label this newer way of thinking, about who in the organization has important knowledge, as the “distributed model” to indicate that knowledge is profuse and widespread.

I have represented this distributed view of organizational knowledge in Figure 2. If we assume that A, B, C, and D are all teams within an organization, we see that A’s knowledge is shared with B; likewise B has

Figure 2 The “distributed model”



some knowledge that A or C or D makes use of. The knowledge flow in this figure moves from multiple sources to multiple places. There is no hint that the team in location A is more expert or somehow smarter than B or C or D. Knowledge transfer goes on between “like people” rather than flowing from the “best” to the “less able”. It is a reciprocal model in which all contribute and all receive.

Ford – Best Practice Replication

One of the examples I saw of this distributed model was the Best Practice Replication system that facilitates the transfer of knowledge among Ford’s 37 vehicle operations plants around the world. Each of these plants contribute practices (e.g. a quicker way to install the front bumper on a car; the use of drive pins instead of screws on the fuel bundle) that have reduced their own costs or increased their productivity. Through an internal internet, a few practices a week are sent to all of the plants. None of the plants are required to use the practices they receive because Ford does not think of the practices as “the right” or “the best” way to do a given task. In fact, it is understood that a plant in Dearborn, for example, that receives Atlanta’s practice about installing the front bumper, may already have a quicker way of doing that task than the practice the

Atlanta plant provided. Atlanta's practice may, however, be of use to the Nashville plant or to the plant in Saarlouis, Germany. Although all plants are required to participate in the system, the choice of which and how many practices to adopt is left to the plant level.

Ford call this system "Best Practice Replication" but the system is not about a plant being "best"; rather the way it is designed is an acknowledgment that each of the vehicle operations plants has something to offer the other plants. In fact, an integral element of the system is a summary report of all 37 plants which shows how many practices each plant has contributed and how many each has adopted. If a regional manager notices that a particular plant in his or her region has contributed few new practices, there is pressure on that plant to increase its submissions because it is assumed that there are practices that are occurring in that plant that would be of use to others.

British Petroleum – Peer Assist

A very different example of the "distributed model" that I investigated during my study, was British Petroleum's Peer Assist which is designed to encourage colleagues, who are equivalent in rank and experience, to assist teams who are making difficult interpretations and tough decisions. The "assisters" are not corporate staff, nor are they in any hierarchical or reporting relationship to those who are asking for assistance. Rather, they are peers who, in the coming months, are themselves likely to be asking others to give them the same kind of assistance. These assisters travel to the site of the team that is requesting the assistance and work with that team on a specific issue the team is facing. They do not arrive with a "dog and pony" show, nor do they come to brag about what they have already accomplished; rather the focus of the day-long meeting is on the specific objectives that the team making the request has laid out.

The selection of which colleagues to ask for assistance, and even whether the assistance provided is put to use, is up to the team requesting the help. Peer Assist is a way to share the tacit knowledge of the organization, while Ford's Best Practice Replication deals with explicit organizational knowledge. When

I am giving presentations about the distributed model, I often use Peer Assist as an example. Sometimes participants mention "peer reviews" as a similar process in their own organizations. And although I recognize that a peer review process shares characteristics with Peer Assist, it seems to me to be more closely related to the "expert model." That is, a peer review team, or "murder board" as they are sometimes called, offers useful advice but it is offered from a position of evaluation. The flow is from those who have been designated as official representatives to those who are being judged. The striking difference with Peer Assist is that the peers who come to assist learn as much as those being assisted – it is a reciprocal exchange. The difference between a peer review and Peer Assist, as subtle as it may be, is at the heart of this changing perception about who in the organization has credible knowledge.

Lockheed-Martin - LM21 Best Practice

A third, and still different example, I saw during my study of knowledge transfer processes, was Lockheed-Martin's LM21 Best Practice. It began with the identification of six critical areas (e.g. program management, operations, engineering, employee development, indirect cost, and procurement) that were selected because they had high potential for cost savings. Lockheed-Martin conducted an extensive internal benchmarking effort across 17 of its companies. It benchmarked some 70 practices within the six areas that had been identified. What it found was that none of the 17 companies were best at everything on the list and, equally important, every company was best at something!

To facilitate the transfer of these 70 practices, that involved both explicit and tacit knowledge, Lockheed-Martin put together 70 "transfer teams" each made up of representatives from eight different units. On each transfer team, for example, "design to value", two "source" teams were represented, that is, teams that had scored very high when they benchmarked "design to value". The other six members on the transfer team represented "receiving" teams who chose to be a part of the "design to value" transfer team because that practice was one they wanted to improve

in their own site. However, the units who were a receiving team on the “design to value” transfer team, might serve as a source for a different transfer team, e.g. “supplier relationships” or “quantifying risks”. Each transfer team works as a unit over a period of several months to help members develop business and implementation plans for each of the receiving sites. This design builds reciprocity in on several levels the source team members provide their knowledge and are themselves learning from the receiving team members; the source teams learn from each other, since there are two units serving in the source role on each team; and the source teams become receiving teams for other practices.

Conclusions

In all three of these examples of knowledge transfer, an extensive amount of knowledge activity is taking place:

- each team is both giver and receiver;
- reciprocity is built into the exchange;
- existing knowledge is transferred; and
- new knowledge is developed through the transfer process.

Much of the organizational knowledge produced during this heightened activity would have been lost, or more likely never developed, if these systems had been designed by engineers who were constrained by the assumptions of the “expert model”. When transfer systems are based on that model, the knowledge activity is primarily one-way dissemination – a useful, but less vigorous exchange.

The expert model is, however, still very present in organizations even while the distributed model is growing alongside it. In fact, during my study I saw many knowledge-transfer systems that were based on the assumptions of the expert model – some of which were successful and others whose success was more limited. Even in those that were successful I noted that an unintended consequence of the expert model was to trigger the ubiquitous Not Invented Here syndrome. That syndrome was less evident in transfer systems based on the distributed model, perhaps because teams were more willing to accept what others had created when they observed those

teams were making use of their ideas as well.

The distributed model, then, provides considerable advantage to an organization designing knowledge-transfer systems by facilitating a more dynamic exchange and by reducing resistance to reuse. Even so, the transition is not easily made from expert to distributed model. Organizations have had years of experience in creating systems using expert knowledge, e.g. training classes, journals, books, consultant contracts. So the assumptions of the expert model can influence decisions without managers even being aware that those assumptions are in place. For example, when managers first start to think about how to bring about knowledge sharing in their organization, the metaphor that comes easily to mind is of “collecting, storing, and disseminating knowledge” as though knowledge were a stable commodity that could be stored in a warehouse. How managers think about knowledge impacts the kinds of practices they will put into place. As Wenger (1998) notes, “our design is hostage to our understanding, perspectives and theories” (p. 10).

If the warehouse is a metaphor for the expert model, then a metaphor for the distributed model might be of water flowing across and through the organization; an image of knowledge being continually in motion or always in play. The image BP has developed is “connection” – it talks about knowledge management as building connections between people who have knowledge. That is a very different image than the idea of a warehouse or repository and holding that image has led to some innovative ways to transfer knowledge like Peer Assist. The warehouse image has about it a feeling of control – the certainty of being able to grasp the knowledge of the organization and, maybe, keep it from “walking out the door”. The flowing water image feels less controllable – something that is dynamic rather than stable. But the flowing water image also seems more powerful – after all, there is little that can stand in the way of flowing water.

This new way of thinking, that views knowledge as abundant and widely distributed across an organization, has great power to bring about change, perhaps in directions we have not yet imagined. I do not think those of us who have been working in this field of organizational learning intended to produce

this shift in perception, nor indeed are solely responsible for it. Yet, I cannot help but feel pleased that a shift of such magnitude is taking place and that we have had some small role in bringing it about. It would be hard to prove, of course, whether the past ten years of work on organizational learning is the cause or the effect. But whichever part of the equation it represents, there seem to be strong indications that a shift is taking place that will

have a lasting effect on the culture of organizations and on the people who work in them.

Reference

Wenger, E. (1998), *Communities of Practice: Learning, Meaning, and Identity*, Cambridge University Press, Cambridge.