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KNOWING `WHAT' TO DO IS NOT ENOUGH: TURNING KNOWLEDGE INTO ACTION

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Notes

Why do so much education and training, ***management*** consulting, and business research and so many books and articles produce so little change in what managers and organizations actually do?

In 1996, more than 1,700 business books were published in the United States,(n1) and more are published each year. Many of these books are filled with the same analyses and prescriptions, albeit using different language and graphics, as could be found in similar books published the year before. In fact, many of the ideas proclaimed as new each year can be found in similar books printed decades earlier.(n2) Yet these books find a ready market because the ideas, although often widely known and proven to be useful and valid, remain unimplemented. So, authors try, in part through repackaging and updating, to somehow get managers to not only know but to do something with what they know. And managers continue to buy the books filled with ideas they already know because they intuitively understand that knowing isn't enough. They hope that by somehow buying and reading one more book they will finally be able to translate this performance knowledge into organizational action.

Each year, more than $60 billion is spent on training in and by organizations, particularly ***management*** training. Much of this training, on subjects such as Total Quality ***Management*** (TQM), customer service and building customer loyalty, leadership, and organizational change is based on knowledge and principles that are fundamentally timeless--unchanged and unchanging. Nevertheless, the training often is repeated. Regardless of the quality of the content, the delivery, or the frequency of repetition, ***management*** education is often ineffective in changing organizational practices.

Professor Mark Zbaracki of the University of Chicago studied Total Quality ***Management*** training in five organizations in which senior executives believed that TQM methods could enhance the quality of their products and services and that the training had changed how people performed their jobs.(n3) Zbaracki found, however, that the quantitative TQM methods were not used at all in four of the organizations and only on a limited basis in the fifth. This result is not unique to TQM--we observed it repeatedly during our research.

Each year, billions of dollars are spent on ***management*** consultants by organizations seeking advice--one estimate for 1996 was $43 billion.(n4) But that advice is seldom implemented. One consultant, making a presentation to obtain work from a large

U.S. bank, showed an overhead slide that had the recommendations from four previous consulting studies conducted in just the prior six years for that bank. All four studies had come to the same conclusions, which is not surprising given that smart people from four different firms looked at essentially the same data. The presenter, selling implementation and change rather than analytical services, asked the assembled executives, "Why do you want to pay for the same answer a fifth time?" He and his firm got the job. As another example of knowing but not doing in the world of ***management*** consulting, two consultants from one of the leading firms worked on a project for a large electrical utility in Latin America that was facing deregulation. They were chagrined to discover that ***management*** already had a four-year-old, 500-page document with extensive plans and recommendations produced by a different consulting firm in a previous engagement. They reported:

The old document was very good. It had benchmarking cost studies from best practice utilities all around the world, summaries of the most successful training systems in other industrial companies, and pretty detailed implementation calendars .... As our analysis was based on the same... information that was given to the last consultants four years before... our recommendations were basically the same. The problem was not analysis. It was implementation. Although we could identify some new areas for improvement, the core was almost a copy of the old document .... The client already had the basic information we were giving them.(n5)

Each year the hundreds of business schools in the United States graduate more than 80,000 MBAs and conduct numerous research studies on business topics. Business education and research are growing in scope and prominence in countries around the world. Yet the translation of this research and ***management*** education into practice proceeds slowly and fitfully. There is little evidence that being staffed with people who have an advanced education in business is consistently related to outstanding organizational performance. Many top-performing firms--Southwest Airlines, Wal-Mart, The Men's Wearhouse, ServiceMaster, PSS/World Medical, SAS Institute, AES, Whole Foods Market, and Starbucks--don't recruit at the leading business schools and don't emphasize business degree credentials in their staffing practices. Numerous researchers have found that "little of what is taught in college or even business schools really prepares would-be managers for the realities of managing."(n6) One study reported that 73 percent of the surveyed MBA program graduates said "that their MBA skills were used `only marginally or not at all' in their first managerial assignments."(n7)

Did you ever wonder why so much education and training, ***management*** consultation, organizational research, and so many books and articles produce so few changes in actual ***management*** practice? Did you ever wonder why the little change that does occur often happens with such great difficulty? Why it is that, at the end of so many books and seminars, leaders report being enlightened and wiser, but not much happens in their organizations?

Implementation or Ignorance: Does a Knowing-Doing Gap Really

Exist?

How do we know that knowledge isn't always implemented and that this is a problem affecting organizational performance? And perhaps even more important, how can organizations discover to what degree they are not actually doing what they think they should? These are important, but relatively straightforward, issues.

Evidence of Knowing-Doing Gaps

There are a number of studies within single industries demonstrating that there are superior ways of managing people and organizing their work. Yet although these superior ***management*** practices are reasonably well known, diffusion proceeds slowly and fitfully, and backsliding is common. A study of apparel manufacturing demonstrated that modular production, with an emphasis on team-based production, produced far superior economic performance along a number of dimensions compared with the traditional bundle system of manufacturing using individual piece work and limited training.(n8) Trade publications, industry associations, and the relevant unions had favored modular production since the early 1980s. Nonetheless, in 1992 about 80 percent of all garments were still sewn using the bundle method, and some plants that had adopted modular production abandoned it and returned to the bundle system.

Similarly, evidence for the advantages of flexible or lean production in automobile assembly is compelling.(n9) This knowledge is widely diffused within the industry and has been for some time. Nevertheless, a five-year follow-up study of the diffusion of flexible manufacturing systems found that there was only modest implementation of flexible arrangements and that "some plants undertook only minor changes in their use of high-involvement work practices ... and still others showed modest decreases."(n10) And a large-scale study of semiconductor fabrication revealed substantial differences in performance, as measured by cycle time, line yield, and defect density, based on the ***management*** practices used. Yet the study found substantial variation in these practices, even in an industry that was characterized by geographic concentration, particularly of corporate headquarters, and substantial movement of personnel between firms. In these and other studies the evidence seems compelling that, although there are better ways of managing and organizing, these superior practices are not necessarily quickly or readily adopted."(n11)

Some other examples illustrate the frequently large gap between knowing that something is important and actually doing it. For instance, the Association of Executive Search Consultants conducted a survey in which "three-quarters of the responding CEOs said companies should have `fast track' programs, [but] fewer than half have one at their own companies." As noted in a Fortune article commenting on this study, "Maybe chief executives don't say what they mean, and maybe they have trouble implementing what they say."(n12) Our research indicates that it is the latter problem--implementing what leaders say and know--that is more pervasive.

Evidence from various industry studies, and from studies of firms in multiple industries, shows that knowledge of how to enhance performance is not readily or easily transferred across firms. Moreover, there is evidence that knowledge of how to enhance performance doesn't transfer readily even within firms. There are persistent and substantial differences in performance within facilities in the same company. One study of 42 food plants in a single company doing essentially the same manufacturing tasks with similar technologies found differences in performance of 300 percent between the best- and worst-performing plants. The best plant earned 80 percent more than the mean, and the worst plant earned 40 percent less than the mean for all the plants.(n13) A study of oil refineries reported little consistency in performance in multirefinery organizations. There was no evidence of a "company effect" on performance, indicating that there was not much consistency in ***management*** practices or philosophy across different facilities within the same company.(n14)

An intensive study of an effort to make a Hewlett-Packard (HP) manufacturing unit more effective reported: "By interviewing thirteen such stakeholders from other departments, including procurement, process generation, engineering, and finance, design team members discovered that communication between departments was poor, thus limiting the degree to which they learned from each other .... Opportunities to share innovative process technologies or other sources of competitive advantage were being overlooked."(n15) The problems associated with transferring knowledge within HP have led Lew Platt, the CEO, to lament, "I wish we knew what we know at HP."(n16) Another study of the transfer of best practices, or knowledge, within firms, noted:

You would think that... better practices would spread like wildfire in the entire organization. They don't. As William Buehler, senior vice president at Xerox, said, "You can see a high-performance factory or office, but it just doesn't spread."... One Baldrige winner [said], "We can have two plants right across the street from one another, and it's the damnedest thing to get them to transfer best practices."(n17)

Does the Knowing-Doing Gap Matter?

The answer to the question of whether the knowing-doing gap actually matters for organizational performance is not as obvious as it might at first seem. It is possible that differences in organizational performance come from differences in what firms know--the quality and depth of their insights about business strategy, technologies, products, customers, and operations--rather than from their ability to translate that knowledge into action. There are, however, numerous reasons to doubt this is the case. We do not deny that there are important differences in knowledge across firms, such as differences in the sophistication of their understanding of ***management*** and operations. But we argue that such differences are only part of the reason for differences in firm performance, and that a much larger source of variation in performance stems from the ability to turn knowledge into action.

Why do we argue that the gap between knowing and doing is more important than the gap between ignorance and knowing? First, because there are too many activities and organizations involved in acquiring and disseminating knowledge to plausibly maintain that there are many important performance "secrets." Consider the plethora of books, articles, consultants, and training programs we have already described. All of these have as one of their objectives the transmission of information. There are organizations that specialize in collecting knowledge about ***management*** practices, storing it, and then transferring the information to those who need such information about enhancing performance. These organizations, sometimes called knowledge brokers, make a business of transferring performance knowledge. At least two major consulting firms, Andersen Consulting and McKinsey & Company, have units that specialize in transferring knowledge about best practices learned from work with past clients to current clients who did not know, or at least did not use, such information.(n18)

Although the market for information about "best practices" may not be as efficient as financial or capital markets are reputed to be, it is nonetheless implausible to presume that better ways of doing things can remain secret for long. There are few managers who can resist the temptation to tell their counterparts at other firms or the business press about what they are doing to achieve organizational success. Managers of successful firms are also frequently interviewed and hired by competing firms in the same industry and by firms in other industries that hope to learn and implement the practices of these firms.

Southwest Airlines is a firm that uses fairly simple business practices that are widely known, but it continues to have the best financial performance in the airline industry. Numerous books, case studies, and television shows have described Southwest's ***management*** approach,(n19) but the firm's competitors have either not tried to imitate what it does or, when they have, like the United Shuttle did, they have not been nearly as successful as Southwest.

Second, research demonstrates that the success of most interventions designed to improve organizational performance depends largely on implementing what is already known, rather than from adopting new or previously unknown ways of doing things. Consider one representative study. A field experiment was conducted with an electrical wholesale company with headquarters in Melbourne, Australia. The experiment compared sales changes in branches that used benchmarking with branches that set high performance goals. In the more-effective benchmarking treatment, "at the beginning of each month... each branch was sent a `League Ladder' showing the percentage improvement [in sales] and ranking of all the branches in that group for the past month. In addition, they were sent a list of `Best Practice' hints compiled... from information provided by managers of the best-performing branches."(n20) Over a three-month period, these branches improved their sales performance by almost 6 percent.

The "Best Practice" hints were actually "well-known practices, with the extra

dimension that they were reinforced and carried out reliably in the better performing branches .... Most managers agreed with the hints, but claimed they were already aware of and employing most of them .... Given the nature of the `Best Practice' hints, we can rule out discovery and communication of highly original and effective practices as the reason for improvement in the benchmarking group."(n21) Using regular schedules to plan weekly activities, conducting meetings of branch staff to ***review*** and discuss branch staff performance, training sales representatives in understanding and interpreting sales trend reports, and using practices that ensure fast and reliable customer service are far from rocket science. They are, in fact, common sense.(n22) It is interesting how uncommon common sense is in its implementation.

Or consider Honda's efforts to enhance the performance of its suppliers, which resulted in productivity increases averaging 50 percent at the 53 suppliers participating in Honda's BP (Best Practice, Best Process, Best Performance) program.(n23) A study of Honda's process noted that "the underlying scientific knowledge for the reengineering of production lines was primarily concrete and simple rather than abstract and complex."(n24) The changes were consistent with the idea of kaizan, or continuous improvement, most of them being small, simple, and in many cases, quite commonsensical given the particular manufacturing process. The genius of the Honda system was in its implementation, not in particularly novel or complicated technical ideas for enhancing productivity.

If there is widespread diffusion of information on "best" (or at least "better") practices, and if the evidence suggests that many successful interventions rely more on implementation of simple knowledge than on creating new insights or discovering obscure or secret practices used by other firms, then our position that the gap between knowing and doing is important for firm performance follows logically. This conclusion means that although knowledge creation, benchmarking, and knowledge ***management*** may be important, transforming knowledge into organizational action is at least as important to organizational success.

How Knowledge *Management* Contributes to the Knowing-Doing Problem

One might think that with the current interest in "knowledge ***management***" and intellectual capital, there wouldn't be a knowing-doing problem. After all, there is general acceptance that "knowledge has become increasingly important as a contributor to a country's and individual firm's success in industrial competition."(n25) Tomas Stewart's conclusion is typical: "The new economy is about the growing value of knowledge as an input and output, making it the most important ingredient of what people buy and sell."(n26) But the view of knowledge taken by many consultants, organizations, and ***management*** writers is of something to be acquired, measured, and distributed--something reasonably tangible, such as patents. There are two problems with this conception of knowledge or know-how First, the conception of knowledge as something explicit and quantifiable draws a

problematic distinction between knowledge as a tangible good and the use of that good in ongoing practice. The emphasis that has resulted has been to build the stock of knowledge, acquiring or developing intellectual property (note the use of the term property) under the presumption that knowledge, once possessed, will be used appropriately and efficiently. As we have seen, this presumption is often not valid.

There is some attention in both the ***management*** literature and in ***management*** practice to knowledge in use, but this perspective is comparatively rare. Commenting on the papers at a conference on knowledge ***management***, Don Cohen noted, "In the U.S., most knowledge practice focuses on collecting, distributing, re-using, and measuring existing codified knowledge and information. Practitioners often look to information technology to capture and distribute this explicit knowledge; firms measure success by near-term economic returns on knowledge investment."(n27) An Ernst & Young survey of 431 firms conducted in 1997 is quite revealing about why most firms' efforts in knowledge ***management*** are not likely to do much good and may even be counterproductive regarding turning knowledge into organizational action. According to data from that survey (see Figure 1), most firms' efforts consist of investing in knowledge repositories such as intranets and data warehouses, building networks so that people can find each other, and implementing technologies to facilitate collaboration. These are all activities that treat knowledge pretty much like steel or any other resource, to be gathered, shared, and distributed. What firms haven't done very much is build knowledge into products and services, or develop new products and services based on knowledge. Furthermore, there is no item on this list of knowledge ***management*** projects that reflects implementing knowledge on an ongoing basis.

One of the main reasons that knowledge ***management*** efforts are often divorced from day-to-day activities is that the managers, consulting firms, and information technologists who design and build the systems for collecting, storing, and retrieving knowledge have limited, often inaccurate, views of how people actually use knowledge in their jobs. Sociologists call this "working knowledge."(n28) Knowledge ***management*** systems rarely reflect the fact that essential knowledge, including technical knowledge, is often transferred between people by stories, gossip, and by watching one another work. This is a process in which social interaction is often crucial. A recent study of 1,000 employees in business, government, and nonprofit organizations reported that "most workplace learning goes on unbudgeted, unplanned, and uncaptured by the organization .... Up to 70 percent of workplace learning is informal."(n29) This study by the Center for Workforce Development found that informal learning occurs in dozens of daily activities, including participating in meetings, interacting with customers, supervising or being supervised, mentoring others, communicating informally with peers, and training others on the job.

Yet, most knowledge ***management*** efforts emphasize technology and the storage and transfer of codified information such as facts, statistics, canned presentations, and written reports. A June 1997 Conference Board conference on creating and

leveraging intellectual capital reported: "Most corporate initiatives to manage intellectual capital are focused on specific projects, the most common of which deploy technology to share and leverage knowledge and best practices."(n30) There is an unfortunate emphasis on technology, particularly information technology, In these efforts. For instance, one recent article on making knowledge ***management*** a reality asserted that "it's clear that an intranet is one of the most powerful tools for achieving results within this [knowledge ***management***] arena."(n31) Another article asserted that "knowledge ***management*** starts with technology."(n32) We believe that this is precisely wrong. As the Conference Board report noted, "Dumping technology on a problem is rarely an effective solution."(n33) When knowledge is transferred by stories and gossip instead of solely through formal data systems, it comes along with information about the process that was used to develop that knowledge. When just reading reports or seeing presentations, people don't learn about the subtle nuances of work methods-the failures, the tasks that were fun, the tasks that were boring, the people who were helpful, and the people who undermined the work.

Formal systems can't store knowledge that isn't easily described or codified but is nonetheless essential for doing the work, called tacit knowledge. So, while firms keep investing millions of dollars to set up knowledge ***management*** groups, most of the knowledge that is actually used and useful is transferred by the stories people tell to each other, by the trials and errors that occur as people develop knowledge and skill, by inexperienced people watching those more experienced, and by experienced people providing close and constant coaching to newcomers.

The Ernst & Young survey described earlier also asked executives to rate their organizations on how well they were doing in the various dimensions of knowledge ***management***. These results are reproduced in Figure 2. Managers seem to believe they are doing a good job in generating new knowledge and even doing pretty well in obtaining knowledge from the environment. What they aren't doing very well at all, by their own assessments, is transferring knowledge within the organization. And perhaps most important, Ernst & Young didn't even ask if the knowledge in these firms was being used by the firms--not just in decision making which was covered in the survey, but in day-to-day operations and ***management*** practices.

Knowledge ***management*** systems seem to work best when the people who generate the knowledge are also those who store it, explain it to others, and coach them as they try to implement the knowledge. For example, Hewlett-Packard's Strategic Planning, Analysis, and Modeling group has had success transferring knowledge about supply chain ***management*** that has been implemented in many HP divisions. One of the reasons the group has been successful is that the same people who do this internal consulting are also responsible for storing and disseminating knowledge about it within the company. Corey Billington, the head of this group, describes his job as "part librarian, part consultant, and part coach."(n34) He is responsible for knowing the technical solutions and the stories surrounding the 150 or so consulting jobs his group has done within HP so that he and others in his group can suggest ideas to help new internal clients and can actually coach the clients as they

implement the ideas.

The second problem with much of the existing literature and practice in knowledge ***management*** is that it conceptualizes knowledge as something tangible and explicit that is quite distinct from philosophy or values. As Don Cohen, a writer specializing on knowledge issues, put it, "The noun `knowledge' implies that knowledge is a thing that can be located and manipulated as an independent object or stock. It seems possible to `capture' knowledge, to `distribute,' `measure,' and `manage' it. The gerund `knowing' suggests instead a process, the action of knowers and inseparable from them."(n35) A leading Japanese scholar in the area of knowledge in organizations made a simple but important point: "Knowledge is embedded in... these shared spaces, where it is then acquired through one's own experience or reflections on the experiences of others .... Knowledge is intangible."(n36)

The fact that knowledge is acquired through experience and is often intangible and tacit produces a third problem in turning knowledge into action. One important reason we uncovered for the knowing-doing gap is that companies overestimate the importance of the tangible, specific, programmatic aspects of what competitors, for instance, do, and underestimate the importance of the underlying philosophy that guides what they do and why they do it. Although specific practices are obviously important, such practices evolve and make sense only as part of some system that is often organized according to some philosophy or meta-theory of performance. As such, there is a knowing-doing gap in part because firms have misconstrued what they should be knowing or seeking to know in the first place.

Why has it been so difficult for other automobile manufacturers to copy the Toyota Production System (TPS), even though the details have been described in books and Toyota actually gives tours of its manufacturing facilities? Because "the TPS techniques that visitors see on their tours the kanban cards, andon cords, and quality circles--represent the surface of TPS but not its soul."(n37) The Toyota Production System is about philosophy and perspective, about such things as people, processes, quality, and continuous improvement. It is not just a set of techniques or practices:

On the surface, TPS appears simple .... Mike DaPrile, who runs Toyota's assembly facilities in Kentucky, describes it as having three levels: techniques, systems, and philosophy. Says he: Many plants have put in an andon cord that you pull to stop the assembly line if there is a problem. A 5-year-old can pull the cord. But it takes a lot of effort to drive the right philosophies down to the plant floor.(n38)

A similar perspective is evident in the study examining how Honda creates lean suppliers. Honda chooses its supplier-partners in large part based on the attitudes of the companies' ***management***. "In the words of Rick Mayo, the Honda engineer directing these activities, We are a philosophy-driven company ... Honda felt it was easier to teach the technical knowledge associated with a different product or process technology than to find a technically-capable supplier possessing the combination of risk-taking attitude, motivation to improve, responsiveness to future needs, and

overall competence that is valued so highly."(n39)

Nor is this emphasis on philosophy just the view of some Japanese automobile companies. The importance of values and philosophy is a theme that was repeated by Howard Behar, president of Starbucks International, the coffee company; David Russo, vice president of human resources for SAS Institute, a software firm recently ranked by Fortune as the third-best company to work for in the United States; and George Zimmer, founder and chairman of The Men's Wearhouse, a rapidly growing, extremely profitable off-price retailer of tailored and casual men's clothing. All three of these organizations have been financially successful, and all are renowned for their people ***management*** practices. In all three instances, the message was the same: What is important is not so much what we do--the specific people ***management*** techniques and practices--but why we do it--the underlying philosophy and view of people and the business that provides a foundation for the practices. Attempting to copy just what is done--the explicit practices and policies--without holding the underlying philosophy is at once a more difficult task and an approach that is less likely to be successful. Because of the importance of values and philosophy in the ***management*** processes of many successful companies, the emphasis on the tangible, explicit aspects of knowledge that characterizes most knowledge ***management*** projects is unlikely to provide much value and may be, at worst, a diversion from where and how companies should be focusing their attention.

Turning Knowledge into Action

Knowledge and information are obviously crucial to performance. But we now live in a world where knowledge transfer and information exchange are tremendously efficient, and where there are numerous organizations in the business of collecting and transferring best practices. So, there are fewer and smaller differences in what firms know than in their ability to act on that knowledge. It is widely recognized that many firms have gaps between what they know and what they do, but the causes have not been fully understood. Harlow Cohen, the president of a Cleveland, Ohio, consulting firm, has called this gap between knowing and doing the performance paradox: "Managers know what to do to improve performance, but actually ignore or act in contradiction to either their strongest instincts or to the data available to them."(n40)

Eight Guidelines for Action

There are no simple analyses or easy answers for the knowing-doing problem. The problem is not just costs, or leadership, or some single organizational practice that can be changed to remedy the problem. The knowing-doing gap arises from a constellation of factors and it is essential that organizational leaders understand them all and how they interrelate. Nonetheless, there are some recurring themes that help us understand the source of the problem and, by extension, some ways of addressing it.

1. Why before How: Philosophy Is Important.

Why has General Motors in the past had so much difficulty learning from Saturn or NUMMI? Why have executives from so many firms toured Toyota's facilities but failed to comprehend the essence of the Toyota Production System? Why have so few firms copied The Men's Wearhouse, SAS Institute, Whole Foods Market, AES, PSS/World Medical, Kingston Technology, or the many other successful firms that people read about, visit, but then fail to learn from? One reason is that too many managers want to learn "how" in terms of detailed practices and behaviors and techniques, rather than "why" in terms of philosophy and general guidance for action. Skip LeFauve was president of Saturn for much of its history and is now in charge of General Motors University. This internal university is expected to take the lessons from Saturn and the best practices and knowledge from throughout the company and diffuse them throughout GM. LeFauve said this about learning the lessons from Saturn:

It's a process, it's not an answer. I think a lot of people got misled when they started to study Saturn. They thought it was an answer, when, in fact, it's fundamentally a process you could use whether you are going to fry chickens or make cars. The process is founded in this focus on people and their need to understand before they can do it. And the thing that came out of it was this focus on leadership teaching. When you came into the organization, the first thing the leaders did was to introduce themselves to everyone who came into the company. And, the leaders taught the new people who the leaders are and what our philosophies are, what our background was, and what we hoped we would be able to achieve. We laid the philosophical base. That's the first thing you get when you join Saturn.

I can't tell you how many people from General Motors who came to Saturn and said, "I've been with General Motors for 25 years and I have never met a plant manager, let alone the president of the company." So I would tell them that their input is important. That they have a responsibility to understand, so that when they do something, they'll understand not only what to do but why they are doing it. If you don't understand how and you ask questions, it's okay. This is a learning organization, and the leaders will teach.(n41)

Saturn, Toyota, Honda, IDEO Product Development, AES, the SAS Institute, The Men's Wearhouse, and many of the other organizations we have discussed begin not with specific techniques or practices but rather with some basic principles--a philosophy or set of guidelines about how they will operate. AES has a set of four core values--fun, fairness, integrity, and social responsibility--that guide its behavior. It also has a set of core assumptions about people that it tries to implement in its ***management*** approach: that people (1) are creative, thinking individuals, capable of learning; (2) are responsible and can be held accountable; (3) are fallible; (4) desire to make positive contributions to society and like a challenge; and (5) are unique individuals, deserving of respect, not numbers or machines.(n42) SAS Institute has a philosophy of treating everyone fairly, equally, and with trust and respect--treating

people in accordance with the firm's stated belief in their importance to the organization. The Men's Wearhouse philosophy comes from founder George Zimmer's background: "He'd grown up in the mid-sixties to early seventies... and was definitely interested in alternative forms of social organization."(n43) Zimmer believes very strongly that there is tremendous untapped human potential and that it is his company's job to help people realize that potential. "What creates longevity in a company is whether you look at the assets of your company as the untapped human potential that is dormant within thousands of employees, or is it the plant and equipment?... If you ask me how I measure the results of my training program, I can't. I have to do it on... trust in the value of human potential."(n44) That is why Zimmer has stated that the company is in the people business, not the suit business.

These firms learn and change and do things consistent with implementing their general principles to enhance organizational performance. Operating on the basis of a general business model or theory of organizational performance, a set of core values, and an underlying philosophy permits these organizations to avoid the problem of becoming stuck in the past or mired in ineffective ways of doing things just because they have done it that way before. They don't let precedent or memory substitute for thinking. No particular practice, in and of itself, is sacred. What is constant and fundamental are some basic business and operating principles. Consequently, these firms are able to learn and adapt, to communicate with newcomers and across large geographic distances, and to do so in ways consistent with their basic understanding of what creates success and high performance in their particular business.

2. Knowing Comes from Doing and Teaching Others How.

In a world of conceptual frameworks, fancy graphics presentations, and, in general, lots of words, there is much too little appreciation for the power, and indeed the necessity of not just talking and thinking but of doing--and this includes explaining and teaching--as a way of knowing. Rajat Gupta, managing director of McKinsey since 1994, had this to say about the importance of apprenticeship and experience in developing leadership within the firm: "The notion of apprenticeship and mentoring is that you learn by observation, learn from doing together with someone who's done it before .... You [also] learn a lot when you're thrown into a situation and you don't have a lot of help."(n45) Tom Lasorda, a senior executive at General Motors, said it well:

Where we go from an awareness stage to a real knowledge is where we have problems. We are aware of it [for instance, standardized work or lean manufacturing] but we don't have the knowledge because we've never had to teach it or implement it. And I see that's a huge gap, where people don't engage in the learning process by teaching. And where companies are doing that I think we are seeing far greater results on an operational level. Because now you understand it. You're committed because you're teaching it, and you're coaching people in the implementation.(n46)

Teaching is a way of knowing, and so is doing the work, trying different things, experimenting. As David Sun of Kingston Technology said, "If you do it, then you will know." Honda's emphasis on putting people where they could see the actual part and the actual situation reflects the idea that seeing and touching, being closely involved in the actual process, is imperative for real understanding and learning.

The notion that learning is best done by trying a lot of things, learning from what works and what does not, thinking about what was learned, and trying again is practiced with religious zeal at IDEO Product Development, the largest and most successful product design consulting firm in the world. CEO David Kelley likes to say that "enlightened trial and error outperforms the planning of flawless intellects." As in the other action-oriented firms we studied, Kelley doesn't just talk about the virtues of learning through trial and error. They live it at IDEO. As engineer Peter Skillman puts it, "Rapid prototyping is our religion. When we get an idea, we make it right away so we can see it, try it, and learn from it." Kelley, Skillman, and many others at IDEO also regularly teach classes to managers, engineers, and artists in which they explain their philosophy and have students enact it by designing, building, demonstrating, and pitching their inventions to others.

What an out-of-fashion idea--being in proximity to what you are learning, using experience as a teacher, learning by doing and teaching! We live in an era of distance learning. We have companies that sell CD-Roms so that people can learn things alone by interacting with their computers. We have a plethora of seminars in which people sit and listen to ideas and concepts. We human beings can learn some things those ways--mostly specific cognitive content. But many things, about organizations, operations, and people, can only be learned by firsthand experience. The tangible, physical, material aspects of knowledge acquisition and knowledge transfer, learning by doing, learning by coaching and teaching, are critical. A senior executive in charge of the quality initiative at a large financial services institution described that firm's evolution to understanding the importance of learning through experience:

When we started out, we probably didn't do our training right. We did it the way we had all been taught .... If you have facts to transmit, you stand up and transmit facts. Then you say, "what are your questions," and you dialogue around the questions and close the book. At the end, you assume people will go off and do something with it. That's just dead wrong, And so we combined the experiential learning with some of the textbook learning. And the training got a little better .... What really matters is if you can get a team together around a business process that they think is really important in their business and have them participate in activities that show them what these tools [of the quality process] are about.

Knowing by doing is, unfortunately, a less cost-efficient way of transmitting knowledge. There is less ability to leverage the Internet or to put lots of people in a large room with one instructor, which are, unfortunately, the modes of instruction at most business schools today. But both the evidence and the logic seem clear: Knowing by doing develops a deeper and more profound level of knowledge and

virtually by definition eliminates the knowing-doing gap.

3. Action Counts More Than Elegant Plans and Concepts.

A number of years ago, Tom Peters and Robert Waterman talked about the virtues of a "ready, fire, aim"(n47) approach to running organizations. We have seen that this principle of acting even if you haven't had the time to fully plan the action has two advantages. First, it creates opportunities for learning by doing. Without taking some action, without being in the actual setting and confronting the actual "part," learning is more difficult and less efficient because it is not grounded in real experience. Second, the idea of "firing" and then "aiming"--or doing and then planning--helps to establish a cultural tone that action is valued and that talk and analysis without action are unacceptable.

Greg Brenneman, the COO of Continental Airlines and one of the architects of its successful turnaround, attributed the turnaround to an action orientation: "If you sit around devising elegant and complex strategies and then try to execute them through a series of flawless decisions, you're doomed. We saved Continental because we acted and we never looked back."(n48) In a world where sounding smart has too often come to substitute for doing something smart, there is a tendency to let planning, decision making, meetings, and talk come to substitute for implementation. People achieve status through their words, not their deeds. Managers come to believe that just because a decision has been made and there was discussion and analysis, something will happen. As we have seen, that is often not the case.

Although architects live in the world of plans, Walter Gropius, one of the twentieth century's greatest architects, asserted that being action oriented, rather than just enamored with plans and theories, was crucial to success in his occupation also:

I have found throughout my life that words and, particularly, theories not tested by experience can be much more harmful than deeds. When I came to the U.S.A. in 1937, 1 enjoyed the tendency of Americans to go straight to a practical test of every newborn idea, instead of snipping off every shoot by excessive and premature debate over its possible value.(n49)

A while ago we worked with the World Bank as it was trying to transform its culture. One of the problems the bank faced was a set of human resource policies and practices that clashed with the culture the bank thought it wanted and that it needed to implement to fulfill its evolving role in the world economy. So the bank embarked on an effort to change those practices. But what this particular change effort largely entailed, and this was true in many other instances of change in the bank, was preparing a white paper laying out options, providing rationales, talking about implementation plans, and providing supporting data. The white paper on human resource practices was then critiqued by senior officials and revised on the basis of those critiques. And the process continued-analysis, writing, critique, and revision. There was great concern to produce an outstanding paper about human resource

policies and practices, but much less concern with actually making any changes. This sort of process came naturally in an environment of people with advanced degrees who had learned to write journal articles in precisely this way--write, get comments, revise, and produce yet another draft. But behavior that may be useful for writing articles in scientific journals can be quite unproductive for organizations trying to change. In the time it took the people at the bank to analyze, document, propose, and revise descriptions of possible changes to ***management*** practices, they could have implemented many actual changes, learned what worked and what did not and why, and could have made revisions based on that experience numerous times.

4. There Is No Doing without Mistakes. What Is the Company's Response?

In building a culture of action, one of the most critical elements is what happens when things go wrong. Actions, even those that are well planned, inevitably entail the risk of being wrong. What is the company's response? Does it provide, as PSS/World Medical does, "soft landings"? Or does it treat failure and error so harshly that people are encouraged to engage in perpetual analysis, discussion, and meetings but not to do anything because they are afraid of failure?

Warren Bennis and Burr Nanus defined learning as an extension of the word trying and asserted that "all learning involves some `failure,' something from which one can continue to learn."(n50) They proposed a general rule for all organizations: "Reasonable failure should never be received with anger," which they illustrated with the following story about Thomas Watson Sr., IBM's founder and CEO for many decades:

A promising junior executive of IBM was involved in a risky venture for the company and managed to lose over $10 million in the gamble. It was a disaster. When Watson called the nervous executive into his office, the young man blurted out, "I guess you want my resignation?" Watson said, "You can't be serious. We just spent $10 million dollars educating you!"(n51)

At AES, there is a culture of forgiveness, in keeping with the firm's values and beliefs. Roger Sant, one of the cofounders and currently the chairman of the company, noted, "You would be amazed at how quickly people support and forgive one another here." Dennis Bakke, the other cofounder and current CEO, commented, "It is okay to make most mistakes. We are all human. It's part of AES's values to accept mistakes, as long as people own up to them."(n52)

5. Fear Fosters Knowing-Doing Gaps, So Drive Out Fear.

Fear in organizations causes all kinds of problems. Greg Brenneman, COO of Continental Airlines, noted: "Pressure and fear often make managers do erratic, inconsistent, even irrational things."(n53) No one is going to try something new if the reward is likely to be a career disaster. The idea of rapid prototyping--trying things out to see if they work and then modifying them on the basis of that

experience--requires a culture in which failure is not punished because failure provides an opportunity for learning. Clayton Christensen, a professor at Harvard Business School, has said, "What companies need is a forgiveness framework and not a failure framework, to encourage risk taking and empower employees to be thinking leaders rather than passive executives."(n54) Fear produces sentiments like the following, which we often hear when we teach executives about high-performance work cultures and ask why their firms don't implement these ideas: "We may not be doing very well, but at least our performance is predictable. And, no one has gotten fired for doing what we're doing. So why should we try something new that has risk involved?"

That is why firms that are better able to turn knowledge into action drive out fear. They don't go on missions to find who has erred, but rather attempt to build cultures in which even the concept of failure is not particularly relevant. Livio DeSimone, Minnesota Mining and Manufacturing's CEO, commented: "We don't find it useful to look at things in terms of success or failure. Even if an idea isn't successfully initially, we can learn from it."(n55) Such firms put people first and act as if they really care about their people. If they have too many people--as the New Zealand Post did or as Continental Airlines did when it began paring back its routes--those who are redundant are treated humanely, with dignity and respect. At Continental, many managers had come in under Frank Lorenzo, CEO and hostile takeover king. Many of these managers were replaced because they drove fear in rather than out of the organization, clashing with the new culture. As routes were restructured, other people had to leave. But, "cleaning house needn't be a brutal or humiliating experience .... If you fire people inhumanely, you'll be left with a bunch of employees who don't trust the company or their coworkers."(n56)

Putting people first and driving out fear are not just ideas to be implemented when times are good. You can downsize, you can even close a facility; but do it in a way that maintains employee dignity and well-being and, as a consequence, productivity and performance. The people at the Newcastle Steelworks of the Australian firm BHP learned in April 1997 that the works would have to be closed. There was overcapacity in steel making within BHP and this particular plant required excessive capital for modernization. Extensive evidence suggests that "at least half of the plants facing closure experience between limited to extreme productivity losses."(n57) A case study of the Newcastle plant, however, revealed that in the time after the closing announcement, the plant enjoyed higher productivity better quality, and better safety. Why did this occur? The plant ***management*** did a number of things right, many of the same things that Levi Strauss did when it implemented plant closings. One of the most important was to make and keep a commitment to look after the employees. The company implemented a program called Pathways, "a structured set of initiatives aimed at assisting employees both to decide their future direction (path) after leaving...and to receive intensive support to achieve it."(n58) That program, coupled with open communication and lots of employee and union involvement, created an atmosphere of trust and mutual respect. If this success in both performance and maintaining employee morale and spirit can be achieved under

the difficult and demanding experience of a plant closure, think what can be achieved under more favorable circumstances by organizations committed to building a workplace in which people aren't afraid of the future.

Fear starts, or stops, at the top. It is unfortunate, but true, that a formal hierarchy gives people at the top the power to fire or harm the careers of people at lower levels. Fear of job loss reflects not only the reality of whether or not one can readily find another job, but also the personal embarrassment that any form of rebuke causes. Organizations that are successful in turning knowledge into action are frequently characterized by leaders who inspire respect, affection, or admiration, but not fear. Jim Goodnight, CEO of SAS Institute, has a modest and unassuming personal style that includes driving a station wagon to work, sitting in an office with the door open (he has a chair in front of the door, so it's not even clear it could be closed), dressing informally, and taking every opportunity to speak informally to people in the company. Herb Kelleher of Southwest Airlines is notorious for his antics such as dressing up as Elvis, Ethel Merman, or Corporal Klinger from M*A*S*H, attending parties with his people, and taking opportunities to talk to everyone in the company he sees. Dennis Bakke of AES likes to visit power plants and talk to operators in the middle of the night. George Zimmer of The Men's Wearhouse attends more than 30 Christmas parties and also seizes every opportunity to visit the stores, a norm that the company encourages for all of its leadership.

Hierarchy and power differences are real. But firms can do things to make power differences less visible and, as a consequence, less fear-inducing. This is possibly one of the reasons why removing status markers and other symbols that reinforce the hierarchy can be so useful and important. Those symbols of hierarchy serve as reminders that those farther down have their jobs, their salaries, and their futures within the firm mostly at the sufferance of those in superior positions. Although to some extent this is always true, removing visible signs of hierarchy--things such as reserved parking spaces, private dining rooms, elaborate, separate offices, differences in dress--removes physical reminders of a difference in hierarchical power that can easily inspire fear among those not in the highest-level positions.

6. Beware of False Analogies: Fight the Competition, Not Each Other.

Cooperation has somehow developed a bad reputation in many organizations. Collaborative, cooperative organizations, where people worry about the welfare of each other and the whole instead of just themselves, seem to remind some people of socialism. Yet, cooperation means that "the result is the product of common effort, the goal is shared, and each member's success is linked with every other's .... Ideas and materials, too, will be shared, labor will sometimes be divided, and everyone in the group will be rewarded for successful completion of the task."(n59) There is a mistaken idea that because competition has apparently triumphed as an economic system, competition within organizations is a similarly superior way of managing. This is not just a sloppy use of analogies, but has real consequences that hurt real people and real organizations. Following this suspect logic, firms establish all sorts

of practices that intensify internal rivalry: forced-curve performance rankings, prizes and recognition for relatively few employees, raises given out in a zero-sum fashion, and individual rewards and measurements that set people against each other.

We have shown that these ideas and the practices they produce almost certainly undermine organizational performance as well as employee well being. British Petroleum enjoyed a turnaround in the 1990s because it encouraged business units to learn from each other and had senior leaders that worked to build a culture of cooperation that made doing so possible. The Men's Wearhouse has succeeded in selling clothes by emphasizing team selling and the fact that employees succeed only as their colleagues succeed. "The customer doesn't care about who gets the commission. All he remembers is the store's atmosphere. That's why we use 'team selling.' One wardrobe consultant can offer the customer a cup of coffee; another can offer to press his clothing while he's in our dressing rooms; and another can take his kids to watch the videos we keep in some of our stores."(n60) One of the reasons that SAS Institute's turnover is so low is that people actually prefer working in a place where they don't have to always look over their shoulder to see who is doing them in. In contrast, learning within Fresh Choice, particularly following the Zoopa acquisition, was inhibited by the competition for internal status and related feelings of insecurity and fearfulness. Learning within General Motors was similarly hampered by unproductive internal competition that left people reluctant to learn from each other or to share their knowledge with internal competitors.

There is also much evidence that people prefer collaborative and cooperative work arrangements. For instance, a study of 180 people from five organizations found that "employees with compatible goals had high expectations, exchanged resources, and managed conflicts. Cooperative interactions improved the work relationship, employee morale, and task completion."(n61) John E Donnelly, the president of Donnelly Mirrors, noted:

People can get satisfaction from a group effort as well as from individual effort. This is a good thing for business, because in an industrial organization it's group effort that counts .... You need talented people, but they can't do it alone. They have to have help.(n62)

Turning knowledge into action is easier in organizations that have driven fear and internal competition out of the culture. The idea that the stress of internal competition is necessary for high levels of performance confuses motivation with competition. It is a perspective that mistakes internal competition and conflict, accompanied by a focus on "winning" internal contests, for an interest in enhancing organizational performance and winning the battle in the marketplace.

7. Measure What Matters and What Can Help Turn Knowledge into Action.

"The foundation of any successfully run business is a strategy everyone understands coupled with a few key measures that are routinely tracked."(n63) But this simple

notion is frequently ignored in practice. Organizations proliferate measures. "Mark Graham Brown, a performance-measurement consultant based in Los Angeles, reports working with a telecommunications company that expected its managers to ***review*** 100 to 200 pages of data a week."(n64) The readily available computer hardware and software that make data capture and analysis easy also make it hard to resist the temptation to confuse data with information and to measure more and more things.

The dictum that what is measured is what gets done has led to the apparent belief that if a company measures more things, more will get done. But that is not at all the case. Southwest Airlines focuses on the critical measures of lost bags, customer complaints, and on-time performance--keys to customer satisfaction and therefore to success in the airline industry. AES focuses on plant utilization (uptime), new business development, and environmental and safety compliance, the factors that are critical to success in the electric power generation business. SAS Institute measures employee retention, important in an intellectual capital business. A few measures that are directly related to the basic business model are better than a plethora of measures that produce a lack of focus and confusion about what is important and what is not.

Organizations tend to measure the past. Typical information systems can tell you what has happened--how much has been sold, what costs have been, how much has been invested in capital equipment--but the systems seldom provide information that is helpful in determining why results have been as they have or what is going to happen in the near future. We sit in too many meetings in which too much time is spent discussing what has occurred but too little time is spent on discussing why or, more important, what is going to be done to create a different and better future.

Organizations tend to measure outcomes instead of processes. We know what the quality of our output is, but we don't know why it is so good or so bad. One of the important lessons of the quality movement is the importance of measuring processes so that process improvement is possible. As we saw, when General Motors became more serious about implementing lean or flexible manufacturing, attention switched to enhancing measures of intermediate outcomes and in-process indicators.

Even fewer organizations measure knowledge implementation. Typical knowledge ***management*** systems and processes focus instead on the stock of knowledge, the number of patents, the compilation of skills inventories, and knowledge captured on overheads or reports and made available over some form of groupware. Holding aside whether these systems even capture the tacit, experiential knowledge that is probably more important than what can be easily written down, such systems certainly don't capture whether or not this knowledge is actually being used. Organizations that are serious about turning knowledge into action should measure the knowing-doing gap itself and do something about it.

8. What Leaders Do, How They Spend Their Time and How They Allocate

Resources, Matters.

The difference between Barclays Global Investors, IDEO, or British Petroleum in the late 1990s and the many organizations that have greater difficulty in turning knowledge into action is not that one set of firms is populated by smarter, better, or nicer people than the other. The difference is in the systems and the day-to-day ***management*** practices that create and embody a culture that values the building and transfer of knowledge and, most important, acting on that knowledge. Leaders of companies that experience smaller gaps between what they know and what they do understand that their most important task is not necessarily to make strategic decisions or, for that matter, many decisions at all. Their task is to help build systems of practice that produce a more reliable transformation of knowledge into action. When Dennis Bakke of AES says that in 1997 he only made one decision, he is not being cute or facetious. He understands that his job is not to know everything and decide everything, but rather to create an environment in which there are lots of people who both know and do. Leaders create environments, reinforce norms, and help set expectations through what they do, through their actions and not just their words.

When Dave House left Intel to become CEO of Bay Networks, a company that was experiencing extremely poor performance, he knew he had to change the existing culture and do so quickly. The company suffered from its creation through a merger of two competitors, Synoptics and Wellfleet Communications, two firms of about equal size, one headquartered on the East Coast and one on the West. Following the merger, the company had tried to take on the best products and ideas of both companies, but what had resulted was product proliferation and slow decision making in a rapidly moving market. "Bay engineers were working on twice as many new products as the company had the resources to ship."(n65) What House did was create a set of courses to teach business practices he believed could help the company, and House taught many of the sessions himself. By actually delivering the material, House showed he was serious about the ideas and about making change happen. Larry Crook, Bay's director of global logistics, described the impact of House's training sessions: "They blew my mind .... He showed us that he was serious about how we conducted ourselves --and that if we wanted to be successful, we had to get down to basics."(n66)

Skip LeFauve told us that the CEO of General Motors teaches in GM University, reinforcing the importance of the knowledge building and sharing activity. David Kearns, when he was CEO at Xerox, applied quality principles to the top ***management*** team as he encouraged their implementation throughout the company. For instance, he and his colleagues thought about who their customers were and realized that these were managers one and two levels below who looked to them for advice and for strategic direction. So Kearns instituted practices to gather information on how well the senior leadership was actually helping executives below them to do their jobs.

The remarkable success of the product development firm IDEO is not simply because the firm has somehow been able to attract "better" designers. Its success is dependent in large measure on a set of ***management*** practices that come from a philosophy that values an "attitude of action" and the importance of learning by trying new things. For instance, David Kelley believes that, even when a designer knows a lot about a product, there are advantages in trying to feel and act "stupid." By pretending to be naive and asking "dumb" questions, and even trying to design solutions that are known to be wrong, product designers can overcome the hazards of being too knowledgeable. The ability of product designers at IDEO to think and act in this fashion comes from the fact that this is how Kelley himself behaves and from his efforts to create consistent norms for ***management*** behavior throughout the company.

Knowing about the Knowing-Doing Gap Is Not Enough

We now have a better understanding of some of the organizational processes and factors that hinder efforts to turn knowledge into action. But even if we do understand something more about why organizations fail to turn knowledge into action, these insights are insufficient to solve the problem. Knowing about the knowing-doing gap is different from doing something about it. Understanding causes is helpful because such understanding can guide action. But by itself, this knowing is insufficient--action must occur.

Why Typical Knowledge Make Knowing-Doing Gaps Worse

- Knowledge ***management*** efforts mostly emphasizetechnology and the transfer of codified information.
- Knowledge ***management*** tends to treat knowledge as a tangible thing, as a stock or a quantity, and therefore separates knowledge as some thing from the use of that thing.
- Formal systems can't easily store or transfer tacit knowledge.
- The people responsible for transferring and implementing knowledge ***management*** frequently don't understand the actual work being documented,
- Knowledge ***management*** tends to focus on specificpractices and ignore the importance of philosophy

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FIGURE 1. Project Priorities

Creating an intranet	47%
Data warehousing/creating knowledge repositories	33%
Implementing decision-support tools	33%
Implementing groupware to support collaboration	33%
Creating networks of knowledge workers	21%
Mapping sources of internal expertise	18%
Establishing new knowledge roles	15%
Launching new knowledge-based products or services	14%

Source: Data from Rudy Ruggles, "The State of the Notion: Knowledge ***Management*** in Practice," ***California Management Review***. 40/3 (Summer 1998): 83.

FIGURE 2. Good or Excellent Performance

Generating new knowledge	46%
Accessing valuable knowledge for external sources	34%
Using accessible knowledge in decision-making	30%
Embedding knowledge in processes, products, and/or services	29%
Representing knowledge in documents, databass, software, etc.	27%
Facilitating knowledge growth	19%

through culture and incentives

Transferring existing knowledge into other parts of the organization 13%

Measuring the value of knowledge assets and/or impact of knowledge ***management*** 4%

Source: Data from Rudy Ruggles, "The State of the Notion: Knowledge ***Management*** in Practice," ***California Management Review***. 40/3 (Summer 1998): 82.

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By Jeffrey ***Pfeffer*** and Robert I. Sutton

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