Improving the way organizations run through participative planning and management.
Data: recording of a transaction

Information: a message

Information doesn’t transform

Undertaking Successful Knowledge Management Efforts

For seven years Tom Davenport and I ran a multi-client research program for Ernst and Young in Boston where we worked with a group of our clients to solve the issues surrounding information and knowledge. We began by defining the difference between them. We tackled data first because it’s easy. Data is just a recording of a transaction housed in a technology system. The world knows everything there is to know about data. We can mine it, store it in a warehouse, and it is still data. It’s necessary to run a company, but it’s dull, uninteresting, and uninspiring.

After a lot of reading, a lot of head scratching, and a lot of interviewing, we came to the conclusion that information exists somewhat independently of data. The best definition of information is that it is a message: it has a sender, and a receiver. The intent of the message is to inform. It changes, sometimes ever so slightly, the way the receiver understands things. Information is not bounded by a repository, per se. Picasso’s Guernica is a perfect example of information. It has a sender—Picasso. It has a receiver—those who view it at the Reina Sofia Art Center in Madrid. And it has a message—the horrors of war. Beethoven’s Ninth Symphony can be considered information: it is a message about the glory of mankind. Information can be as dull as a memo from your boss. Information is flat, it is two-dimensional. It’s not dynamic—it’s frozen.

Information alone can’t change a company. We’ve all heard the mantra of many people who study information: “If we got the right information, at the right time, to the right person, it would solve a lot of organizational issues.” But even if we could get the right information, to the right person, at the right time, it won’t save a company. Information can only bring about an increase in efficiency—which won’t matter if the company is going in the wrong direction. Information can’t transform a company; it can’t bring about effectiveness or innovation.

In 1987 IBM had more information about the markets for information technology than any entity on this planet. There was no report, no source of intelligence, and no document imaginable that IBM didn’t know about, own, or have access to. Most importantly, the people who ran the firm had access. This stuff was all housed in tremendously elaborate databases. They had it; they had access to it. Yet in 1987 IBM almost went bankrupt.
My son who recently took up cigarette smoking has access to all the information on the evils of smoking. He still chooses to smoke. Americans have access to volumes of nutritional information; the average American still gets heavier every year. Having information doesn't matter if we don't work with it, if we don't act on it. We've been sold a great bill of goods about information.

What is knowledge? Is it information-plus or just a lot of information clumped together? When someone is knowledgeable at chess, or chemical processes, or the Broadway theater, they have something that is distinct from mere information. There are thousands of people in Harvard Square who have a lot of information, but they don't always have a lot of knowledge. Knowledge is living—an interesting perspective.

Probably the biggest investment large organizations make is in knowledge. I'm not talking about the training budget—training has little to do with knowledge. I'm talking about the people themselves, their age, their experiences—that is the largest investment. I'll let you in on a little secret. I joined IBM a year ago. Although I'm slower of foot, heavier, less hirsute, certainly less quick of wit than I was at 25, they pay me a great deal more than they would have paid me at 25, even if I have the same number of degrees. What they are buying is my ability to use information—my knowledge.

What makes up knowledge? People generally have experiences that they can draw upon in order to act. Some of it gets imbedded passively, so we can't always say what we know, but we know what to do. But since we only remember a tiny fraction of our experiences, people who think they can document everything are just plain wrong. We can't really describe how we swim, how to ride a bicycle, probably even how we make certain decisions. You make them because you've accumulated a lot of experiences you embody in a tacit way that you can draw upon. We also have experiences that become embodied that we can't draw upon. Human beings are agglomerations of these things. They're put into cognitive frames, and from these frames we derive rules and heuristics, so we are able to make very fast decisions. Some call it intuition, some call it heuristic, others call it compressed expertise. But it is compressed in a way that's unknown, so we can't document it or understand how fast it is. Children do this, infants do this, dogs do this, and 70-year-old executives do it.

We can have knowledge without information, information without data, knowledge without both. When I hire a person with some form of knowledge, I'm buying the output of that clumping which delivers insight and innovation. I increase the odds that the decisions they make will be correct—although there's no perfect decision, no perfect knowledge. Knowledge is what we pay for in organizations—it's
Knowledge delivers insights, continued

What we strive for, it's what we desperately want to create. Knowledge is what delivers insights.

Search for knowledge

When I worked for the Ernst & Young Center for Business Innovation in Boston, we realized we had a great opportunity to do some research. We decided to ask the executives that we worked with over the years one question: “Where do you get the insights you need to run your business?” From the almost 800 executives we asked, we only received one answer: They talk. No executive ever mentioned systems; no one ever mentioned anything to do with anything on paper. Despite all the money put into systems and documents, these executives talk. Management is oral art. Executives talk to the capital markets, they talk to other executives, they talk to executives within their own firms, they talk to consultants, they talk to legal advisors, they talk to clients. They TALK!

I've now seen formalized studies that show about 80 to 90 percent of an executive's time is spent talking. This is counterintuitive to standard business practice. In the U.S., we've spent somewhere between $4 and $5 trillion dollars on information technology since WWII. Yet these executives still spend an enormous percentage of their talking. Is this wrong? Are they crazy? When we tried to formalize that so it made some sense, so that we could work with it, we began to view this as a search for knowledge—a knowledge search, not an information search. These people have much more information than they can handle. It is a search for knowledge.

Knowledge is embedded in people and the culture

Because firms are successful over time, what I've discussed so far is not sufficient to understand how knowledge functions in organizations. IBM has been successful since 1919, and Procter & Gamble has been successful since 1820. Mitsui, in Japan, has been successful since 1473. These companies have been successful for so long because their knowledge is transferred over generations. If a firm is based on the knowledge it has, what happens to knowledge when people leave? Where does the knowledge stay? This is a key question in business strategy because once we know where it is we can do something about it. We can map it, document it, make it visible—we can do all sorts of things. Knowledge is obviously found in people's heads. It also becomes embedded, and that's the right word, embedded, in the routines of the way we work and in the culture itself.

Stories—the medium of culture

Culture is a tricky word to use. Consultants and executives all talk about culture. Clearly companies such as Procter & Gamble, IBM, and Hewlett-Packard have developed a culture over time. Let's just say that culture is a how groups of people work with each other and talk to each other. Culture is also social norms and stories. However we define it, culture is very strong. We can change the governance of the firm, but it is very difficult to change the culture.

Stories are the medium that transmits knowledge in a culture. A new employee
Learn how to act and understand the company's culture by talking to his co-workers. This is how children learn to be adults. People talk to each other; they don't just read memos and write them. Stories are the equivalent of a chromosome's DNA in biology. Richard Dawkins, a leading evolutionary biologist, called stories memes, the carriers of culture, the unit of cultural inheritance. People tell each other stories, legends, myths, odysseys. In such ways, culture is carried on, and knowledge is passed on.

This is why “virtuality” is just nonsense. Virtuality is a thing that was invented by accountants and technologists. It has very little to do about how human beings learn and organize themselves. Ninety percent of communication is sub-verbal, and that part is totally lost unless people get together face to face.

We understand reality through rich stories; we construct metaphors. Context is more important than content. We don’t really care about numbers because that’s not how we executives understand reality. I once sat next to Peter Lynch, the funds manager, on a fairly long airplane ride. It was understanding context that gave him a distinctive edge in building up his funds. Every fund manager had access to the same SEC documents. But he'd look for the context. He'd go to the firms, he'd talk to the management, he talked to the workers, he talked to the customers. He understood context. Clearly, important fund managers have access to CEOs that we individual investors don't have; but it was understanding context that gave Peter Lynch his edge.

Consider just how little of what we know can be put into a document. I grew up in New York City and lived there for about 26 years. If someone asked me to write down everything I know about growing up in New York City from the end of WWII to the Vietnam era, I could put down only some tiny percent. When we are forced to put information into a document, it’s a knowledge repository, a representation. But it’s not knowledge. Knowledge originates in people; it only exists in people. The language itself is misleading: knowledge does not exist as an independent quantity. Knowledge is what one knows and what one knows is knowledge. If someone tries to tell you that there is knowledge in a system, or in documents, hold onto your wallets, because they’re going to try to sell you some consulting services. Take it from me.

Knowledge has duration. Some knowledge is eternal; for example, Plato or the Bible. Some knowledge is not; sometimes it’s frozen and silly. A great way to get promoted is to cut cost. But if you then find your company in a growth mode, that is not true. It was knowledge then, but it’s not knowledge under the new context.

The difference between knowledge and information is that knowledge can transform an organization. We’re heading towards an era of a knowledge economy. Ours is not an information economy. If you and I, and anyone else, can get informa-
Undertaking Successful Knowledge Management Efforts

Knowledge is transformant, continued

Knowledge is the only realistic basis for strategy

Knowledge is invisible, and our accountants, our systems people, and all our technology vendors tell you it is not important—but it's the only thing that is important! When we started our work on knowledge at Ernst & Young, I interviewed a large number of professors of strategy, economics, knowledge, and information. They all had come to a similar conclusion. The knowledge resource base theory of the firm, the theory that an organization is based on what it knows and how it uses what it knows, is the only realistic basis for formulating strategies. The black box theory of the firm, which says the firm can be anything it wants, can raise havoc.

Not long ago, Xerox bought a big pharmaceutical firm and a big real estate firm. Xerox knew almost nothing about pharmaceuticals or real estate. Consultants, investment bankers, and others convinced them to buy them for financial reasons. It was a disaster. They never looked at it from a knowledge prospective. When IBM bought Rohm, it was a disaster. They didn't have the knowledge to run a telecommunications firm.

Organizations tend to be bound by their past

Knowledge as a sustainable resource

Firms are bound; they're past-dependent. They're bound by their history, they're bound by their culture, and they're bound by what they know. The only source of competitive advantage for an organization is what it knows, how it uses what it knows, and how fast it can know something new. It is easy to say that, but it's very hard to practice. It is difficult for firms to know something new because there are countervailing forces.

Increased competition increases the need for knowledge and innovation

Globalization is causing much of the attention focused on knowledge today. There's a great deal of pressure for every marginal dollar of profit. This is especially true in the U.S. In the year I was born, the U.S. had 54% of the world’s GNP. We now have 17%. The pie got bigger of course, but every dollar we earn, we now have to fight for. Globalization radically increases the need for innovative products and services. Increased cycle times and better performance—are those are knowledge issues. They are not issues of technology or process, but of what people know, how fast they can know things, and how they can use knowledge to introduce new products and services.

There is a tremendous growth in the awareness of knowledge as a sustainable resource. We've come to that conclusion at IBM. Many of my colleagues in consultant firms and academia tell me there's nothing sustainable except knowledge: Not
Knowledge as a sustainable resource, continued

technology, not processes, not quality of leadership. Richard Pascal, a management speaker, emphasizes this point by listing the 80 or 90 things that have been offered to firms since WWII as a sustainable advantage. Some of these things like the quality movement, were very good movements. They became embedded in the way we work. Others, like reengineering, were just foisted on firms by investment bankers and consultants. But in any case, the importance of knowledge is not going to go away. Firms need to know things. People pay for knowledge.

Knowledge enables increasing returns

There's a new business model that's emerging, a new way of understanding how firms organize. Knowledge is beginning to be perceived by economists as a factor of production, equal or so in value to land, labor, and capital. It has very unique economic attributes. It is capable of delivering increasing returns rather than diminishing returns. The returns of other forms of tangible materials diminish over time.

Technology gives knowledge scope and scale

Technology is an enabler to knowledge. What we see in many large companies, however, is the substitution of knowledge by technology. The idea that you don't need as many people, or knowledgeable people, if you just push technology on them is simply wrong. We need both. Technology, when used correctly and appropriately, can give knowledge scope and scale. I used to give talks about information and knowledge to the Fortune 500 CIO Conferences in which I would talk about knowledge. None of the Information Technology managers cared at all. They'd take a nap, they'd leave. In most firms the I.T. function are purchasing agents for technology. Executives are only interested in it because it's such a complex subject. Technology doesn't change behavior, and a corollary to that is access alone does not equal value, it only equals access.

Behavior and culture molds the way technology is used, not the reverse

A while ago I was speaking with a man who's a fairly senior executive now in one of the big money-center banks in New York. He told me, “Well, we have all the knowledge we need because we have a network of PCs.” People think that by buying technology, they buy knowledge. My uncle in Brooklyn, New York was on the road a lot, but loved his son and wanted him to succeed. So, he bought him a Britannica Encyclopedia, which was a big investment in the late 1950s. But my uncle didn’t show him how to use it. The kid would build forts, he’d build castles, we would throw the volumes at each other, but no one told him he could use them to learn something.

Too many companies use technology the same way. Company technophiles buy it, put it place, get it to work, get all the protocols up, and assume people are going change the way they work. One of the great principles we’ve learned about managing knowledge is technology does not change behavior. Behavior and culture molds the way the technology is used. Management has that reversed. Software companies and computer companies have run huge ad campaigns claiming, “You’ll
work differently, you'll have knowledge, you'll have information, if you put in place these systems.” This isn't true.

There's a wonderful book written years ago by a Professor at MIT, Itheil de Sola Pool, in which he talks about what predictions were made for commercial telephony in the 1880s. All the great minds of the time thought universal telephony would end war. They thought that if presidents and kings could talk to each other without the intermediation of diplomats, journalists, and state department people, there wouldn't be any more wars. This of course ushered in the bloodiest century in the history of mankind.

My father worked in midtown Manhattan and had friends in the early commercial television industry in the late '40s. The predictions for commercial television were that it would raise the cultural level of the nation and raise the level of political discourse. What has happened? Academic achievement and test scores have dropped significantly since WWII. The culture molded the technology. If you have a culture of individualism, people are not going to act collectively by giving them “group ware.”

There are three tremendously powerful and valuable libraries near where I work: MIT, Harvard, and the Boston Public Library. There can't be much that anyone would want to know that isn't in those libraries. The Boston Public Library has open stacks every day; the University libraries have open stacks on the weekends. Yet, there are no lines; people aren't pounding on the doors to get in. It's astonishing to me when people say, “Oh, we're going to put the whole Library of Congress on five CD ROMs.” If people don't wait in lines to use the libraries now why would they read it because it's on CD-ROM? Howard Siegel wrote a book called Technical Utopianism in American Thinking that explains this cultural phenomenon. I recommend it.

Cheap, transparent and ubiquitous computing raises the premium of knowledge. Technology ownership has lost its competitive advantage because anyone can buy technology and anyone can use it. We no longer have to have enormous investment in glass rooms with white-coated lab technicians. This point was brought home to me about two weeks ago when I saw a computer in a trash can. Computing has become a utility, a cheap thing, like a telephone or electricity. Kids know how to use it. It has simply become the way we live. In the early part of this century when Westinghouse and Edison put up the national grid for electric power, most large firms had Vice Presidents of Electrification whose job it was to find commercial applications for electricity. I think a lot of our MIS and IT executives are in a similar position as computing becomes cheap, transparent, and easy to use.

There is now a great drive toward making knowledge more effective within organizations. I work with large firms that have many branches, factories, and
Performance variation from a lack of knowledge management, continued

They have great variations of performance that they never can effectively explain by economic management theory. It drives them crazy. Theoretically, if two branches, or two factories have access to the same technology, have access to the same leadership, have the same amount of capital, what would account for such wide variation? The answer is knowledge: Undocumented innovations, unarticulated innovations accumulate, like barnacles on a rock and eventually lead to great changes in performance which management doesn't know about. They don't see it, they don't hear it, it's nobody's job to understand it. The strategy group lives above it; they're not too interested in what goes on below. Innovations stay where they are. It is no one's job to seek them out, to bring them forward, to document them, to raise them.

One of the firms I work with is British Petroleum. They found about 70% performance variation occurred among the deep water drilling rigs, even though they were using the same Schlumberger materials, the same drill bits, and had access to the same corporate knowledge. BP used to blame this on the national characteristics of the people on the rigs. About six years ago, under pressure from others and myself, they started to look at what really does account for this performance variation. They found it was innovations by men working on those drills, undocumented, unpublicized. The men would say, “Hey mate, try this rather than that.” It added up over time, but no one ever transferred it. When BP put on a full-court press to document those innovations, and coach and train other parts of the firm that do deep water drilling, they saved about $40 million per well. Managing knowledge has a tremendous impact on the bottom line.

The future comes from working with knowledge

Most people I know are desperate to read tomorrow's newspapers today. But consider how good a guide to the future the past is? Can information or data about the past provide guidance? You can mine it, you can warehouse it, and you can pull all sorts of technological tricks. But it will just tell you more about the past. Don't search for tomorrow's newspaper. I think the only way to get a handle on the future is through knowledge—extracting knowledge, working with knowledge, playing war games, creating scenarios, using the tools that are more psychological. Such tools are a much finer way to understand the future than relying on data or information.

Learning comes from face to face interaction, not documents

About 80% of the global 1,000 companies are working on knowledge management. Their growing recognition of the tremendous shortcomings of the information-capture model is also driving the extraordinary interest in knowledge management. Putting documents in repositories has very little to do with managing knowledge. For a company to say that we've bought Lotus Notes, therefore we're a knowledge-intensive firm, is probably not an accurate statement. Again, putting in place group-ware, without doing anything about knowledge management, is just giving people more technology. It's not necessarily wrong, but it's not an answer to anything. We can put in place taxonomies, we can capture this, we can store that, we
Learning comes from face to face interaction, can archive this, but people don’t learn from documents. There’s been a huge revolution over the last thirty years in our understanding of how people learn, of how people know things. Human beings learn from one another and they learn through stories. Human beings don’t learn from documents. We have to use them. But we don’t really learn anything of fundamental importance from documents in repositories. I do not dismiss libraries, or suggest that we go burn the books. But we learn from teachers, from sages, from wise people. We learn from observation. We model and adapt. If you work for a bank, a utility, a nuclear power station, or Boeing Corporation you obviously have to manage documentation. Boeing has to manage about as many documents as a plane weighs, so clearly they need tremendous document systems. But Boeing will tell you, and I’ve been out there, they are there for safety and regulatory reasons. It’s not the way they learn to make the next generation of airplanes.

A space in which knowledge is created

Knowledge clusters in networks and communities. It does no good to look only at what an individual knows. That’s far less important than what communities, networks, and collectivities know. This is especially true in a process-based firm where there’s transformation of input to output. If you work at an investment bank such as Goldman Sachs it doesn’t matter a lot. There they have stars, and everyone’s happy and very successful. But if you work for an IBM, Hewlett-Packard, or Monsanto, or firms like John Deere, or BP, individual knowledge never pays off. These companies are process firms; they make things, they do things. Knowledge is socially constructed: it’s constructed by the intersection of constant communication and talking. If you don’t allow space for speaking and discussion, you are never going build a knowledge firm. Professor Ikujiro Nonaka, who wrote The Knowledge-Creating Company about this, says that the Japanese call it ba, a sacred space for emerging relationships in which knowledge is created. The space can be a physical space like this room, or it could be mental space, where you have time to reflect, learn, think, or read. Or it could even be cyberspace, less effective, I would add, but it’s still space. Knowledge is expensive. It’s socially constructed. It needs space.

Truth and trust are essential for effectiveness

Nothing happens without what the Army calls “ground truth.” Don’t let everyone turn memos into corporate statements. No one is going to learn from them. People learn when they recognize the truth of their own experience reflected in the documents, reflected in discussions. The U.S. Army spent a lot of our money learning this. They learned another important thing—without face-to-face time, groups don’t cohere. Entropy occurs, there is heat loss at the edges, and it eventually kills— an invisible death. They now create time for their teams to talk, the way we do in business. Unless we let teams physically get together now and then to talk, the group won’t be effective. General Sullivan wrote a book called Hope is Not a Method on this subject. Groups must come together in order to cohere, to build trust in one another. That’s another important knowledge word. Trust is a function of working together; it is anticipated reciprocity. Without trust, nothing occurs.
Author information

Laurence Prusak joined IBM Global Services as managing principal to head the knowledge consulting activities in the IBM Consulting Group. He previously was a principal at The Ernst & Young Center for Business Innovation, where his primary research and consulting interest focused on organizational knowledge and information management. He is co-author with Thomas H. Davenport of two books: Information Ecology, which offers a new approach to the management of information in organizations; and Working Knowledge: How Organizations Manage What They Know, the first full-scale treatment of knowledge in organizations from an executive perspective. Prusak is a visiting faculty member of the Graduate School of Library and Information Science at Simmons College. He has a MS in information science from Simmons College, an MA in economic and social history from New York University, and a BA in history from Long Island University.

Notes

1 Thomas H. Davenport is a professor of information management at Boston University, and co-author with Prusak of Information Ecology and Working Knowledge.
Turbocharging Business Processes with Knowledge

An organization’s performance is largely dependent on the capacity and operation of the business processes that produce the results. Over the last several years, businesses around the world have been busy redesigning how their work is done and “reengineering” key business processes for improved performance. These attempts have enjoyed mixed success; in many cases, expected benefits were not achieved. The frequent association of downsizing with large-scale process redesign projects gave “process reengineering” an almost universally negative image. Yet, the alternatives to reengineering are not so appealing either. Inaction is certainly not viable and the traditional performance gains from incremental improvement alone cannot match the rapid pace of change in today’s world.

There is a growing realization that the performance of many business processes can be substantially boosted without having to totally redesign or reengineer them. Instead, the knowledge applied and gained during the operation of the process can be leveraged to work smarter, make better decisions, select better alternatives, communicate more clearly, and prevent errors. These factors can result in higher productivity, lower costs and superior quality. We call this “turbocharging a business process with knowledge,” or simply, “knowledge turbocharging.”

Like an engine, if work activities are correctly designed, tuned and operated, they can be powerful, responsive and efficient. For many years, internal combustion engine designers have applied a technique known as “turbocharging” to achieve dramatic performance boosts from basic engine designs. A turbocharger is simply an enclosed assembly of two “pinwheels” (technically, turbines) attached to a common shaft. As hot exhaust gases exit the engine, they are directed over one “pinwheel” causing it to spin rapidly. The connecting shaft transfers that captured energy to the other “pinwheel” which pumps more combustible air into the engine. Within certain mechanical limits, the faster the engine runs, the more a turbocharger will boost the engine’s power and torque. The result is greater engine performance from otherwise wasted energy—in essence, a “free” performance boost!

Applying this analogy to business processes is straightforward. Essentially all business processes require operators with specific skills and knowledge to correctly perform tasks and make decisions. Each instance of process performance is an opportunity for “learning;” however, the learning is often confined to the individual
Applied Knowledge Learning

An overview of typical business processes and candidates for knowledge turbocharging

The Business Process

As shown in Figure 1, a business process is basically a series of related activities that takes an input, adds value to it, and produces an output for a customer. Various types and levels of resources are consumed to enable the value-adding activities. The scope and scale of business processes vary widely, as do the inputs, outputs and resources required. From decision-intensive processes like strategic planning or product innovation to highly automated processes for financial transactions, the fundamental characteristics remain the same.

Each and every instance of process execution is an opportunity to learn, yet few processes have defined, embedded, enforceable tasks for capturing, sharing and reusing knowledge assets. Nor do they have specific measurements for controlling these activities. These tasks and measurements may have never been a part of the process or prior efforts to reduce costs may have “streamlined” or eliminated them and/or the resources necessary to perform them.

Some business processes will benefit more than others from capturing, sharing and reusing knowledge assets. The best candidates for “knowledge turbocharging” can be identified using analysis techniques very similar to those used to assess process performance, costs and value-added contribution. Processes that handle a wide range of conditions and involve moderate to heavy decision-making are obvious candidates. However, even processes that handle high volumes of repetitive transactions can contribute valuable insights regarding trends, exceptions and behaviors that benefit other decision-intensive processes.
The Learning Process

Although more intuitive, learning is also a process whereby knowledge is acquired through study and experience, as shown in Figure 2. When new knowledge is acquired by study, it is often stored to be applied when needed or eventually discarded. Case studies, laboratory exercises and “homework” are popular vehicles for applying new knowledge gained from study. Knowledge that is acquired through experience, such as in doing work, thinking, judging, deciding, and communicating, is generally reflected upon before being stored or discarded. The specific path and time required to move through the learning process may vary with each learning situation.

Each of the activities in the learning process is performed in various ways and with different degrees of rigor. For example, we generally study by some combination of reading, viewing and listening. The study may be done well in advance of when the resulting knowledge is needed or it may occur “just-in-time.” Although it may appear complicated when diagramed as a flowchart, the learning process is so intuitive that we are seldom conscious of its execution at the personal level.

This same process can be applied not only to individual learning, but to organizational learning as well. The activities must become more visible and purposeful in their execution, but the collective benefits can be much greater. We seem to learn naturally, almost effortlessly, from our experiences at the personal level, but more rigor is required when knowledge from individual learning is to be captured, stored and shared with others. By explicitly integrating the activities of the learning process with a business process, the discipline and rigor needed for organizational learning can be achieved more consistently.

The result of an effective learning process is not only to increase knowledge, but also to sharpen skills, deepen understanding, develop wisdom, and improve judgment. The better this fundamental learning process can be installed or integrated into a business process, the greater the potential for achieving a substantial performance boost.
Turbocharging Processes With Knowledge

Since some form of knowledge is applied in performing all work activities, it is natural to assume that the fundamental process of learning can be superimposed on business processes, much as a turbocharger can be retrofitted to an internal combustion engine. What would a “knowledge turbocharger” for business processes look like, how would it be installed and how would it operate? As shown in Figure 3, there are three fundamental components of a “knowledge turbocharger”:

- Activities for studying and reflecting on experiences to gain new knowledge
- Activities for capturing, storing and discarding collective knowledge in an accessible repository
- Activities for accessing and applying collective knowledge.

Three Activities Around Using Collective Knowledge

The learning process begins with activities that acquire new knowledge by study or by reflective thinking on recent experiences. Employees learn by studying many types and forms of information using a wide variety of sources and methods. For example, routine “how-to” knowledge may be acquired from reading operating procedures, viewing videos, attending a training session or listening to an experienced mentor. New knowledge to deal with exceptional conditions or problem diagnosis and repair may be obtained by calling a help desk, reading a troubleshooting guide or participating in an interactive video session. When decisions require new contextual knowledge, it may come from reading an industry report or researching material from an on-line database or an Internet search.

Most of us have heard the expression, “Experience is the best teacher!” This is often validated in daily process execution. However, unless specific time and effort is spent in reflecting on the experience soon after it is completed, much of the learning potential is lost. Deeper insights can be gained by thinking about the specific...
1. Study and reflect on experiences to gain new knowledge, continued

context of the learning experience to identify possible patterns, relationships, uniqueness and unexplored alternatives. Since some of the best learning experiences occur when the steady state process is interrupted, the natural pressures to recover the schedule often defer or prevent reflective thinking. The activities for reflective thinking and the discipline to perform them consistently must be embedded into the process and the behavior of the performers.

The U.S. Army has institutionalized a highly successful application of study and reflection using “After Action Reviews” (AARs). AARs are conducted immediately after every mission or assignment to identify the new knowledge gained from that experience by any or all participants. Study and reflection activities have been embedded into all operational processes and the behavior of all process performers has become so consistent that purposeful, experiential learning is now a part of the Army’s culture. This collective sharing of insights and new knowledge produces the immediate benefit of raising the knowledge level of all participants in the shared experience. However, as we will see, the value of these learnings increases dramatically when these insights are captured and stored where other process performers can access and reuse them.

The activities of study and reflection can greatly increase individual or team knowledge and skills. However, the greater potential value of new knowledge can only be realized if it is captured and stored in a collective repository. Knowledge repositories range from “intellectual-capital databases” with categorized explicit knowledge (such as books, articles, reports, and diagrams) to “competency networks” of individuals with more tacit knowledge (such as managing a complex project). In this “knowledge age,” it is natural to equate “repositories” with “databases.” However, the most valuable knowledge in any organization is the tacit knowledge residing in the minds of employees. In this case, the “repository” is a community of individuals who possess specific knowledge. Periodically, knowledge bases need to be reviewed, to ensure that relevant knowledge is maintained and outdated knowledge discarded. Effective creation and use of any knowledge repository depends heavily on changing individual attitudes and behavior to foster knowledge sharing.

The activities of capturing, storing and discarding new knowledge are potentially the most onerous and difficult to enforce. Of course, the time and energy spent here must not exceed the value of having accessible collective knowledge, so it is important to consider different paradigms and new ways of working. For example, teams aligned around projects, cases or customers can begin to do much of their work using group collaboration tools. Not only do they free themselves from the requirement of being in close physical proximity, they automatically capture the essence of their experiential learning as they do their work. The critical task of capturing and storing new knowledge involves summarizing key learning points and referencing previously recorded work records. Useful topics include situation descriptions, input data sets, analysis techniques, decision criteria, alternatives considered and trade-offs made. Contextual
information of this nature provides deeper insights to potential re-users than just capturing and storing the final outcome of a learning experience.

Continuing with the example of the U.S. Army’s “After Action Reviews” we note that new knowledge and insights gleaned from study and reflection are captured in many different forms and formats, but they are always captured. They may be entered directly into a computer and transmitted electronically to the central repository or they may be handwritten in the field and physically sent to the central location to be entered into the repository. Videotaping is a popular technique used by the Army. Both the original actions and the after action reviews are recorded to facilitate capturing the learnings at the central repository.

Global networks, mobile computers and emerging software tools provide the essential infrastructure for group collaboration, but the key to successful collaboration lies in changing the behavior of individuals, specifically, how they think about and do their work. Our experience, both within IBM and with external customers, has demonstrated that simply building the technological infrastructure is not effective by itself. Collaboration requires an emphasis on work activities and supporting human resource policies, such as training, rewards and performance measurement. Without this supportive infrastructure, the long-term success of any learning program is dubious, at best.

If the energy captured by a turbocharger were never put to use, engine performance would not increase. It would be just as pointless to expend time and energy identifying, capturing and storing new knowledge from a business process if it were not effectively reapplied in subsequent operations. In fact, the more knowledge can be applied in the process, the more performance will likely increase. Discipline and the method of making knowledge available become critical.

There are two fundamental approaches for making new knowledge available to the organization: by proactively distributing it or by reactively responding to requests. These are not mutually exclusive and are often most effective when used in combination. As new process-related knowledge is acquired, it can be distributed at once or periodically to a known audience. One “knowledge network” leader we know periodically publishes an abstract of new entries in an intellectual capital database to “trigger” specific requests for the complete knowledge asset by those practitioners with an interest or need. This “notification” or “push” approach can be effective in processes that have multiple employees who regularly use a broad spectrum of knowledge, such as technical help desks or customer service centers.

Many processes have more focused knowledge requirements. For example, product development or project management processes may require knowledge related to specific technologies, environments or geographies. Operators of these processes may benefit most from selective retrieval of the knowledge they need from private or public repositories of specialized knowledge. If tacit knowledge is required, the repository will likely be a network or community of individuals and the search.
may involve a “knowledge coordinator” who can identify and facilitate contact with the individuals who have the required knowledge. When explicit knowledge is required, the power of technology can often be applied to quickly search on-line databases within an enterprise or around the world using electronic networks, internet, and keyword-in-context search functions.

Regardless of the search technique or source used to acquire new knowledge, time and mental energy will be required for an individual to review, evaluate, translate, and possibly reformulate it before applying it to the current process instance. Therefore, these activities and the time to perform them must be provided within the process flow. For the Army’s “After Action Review” process, the mission or assignment leader is responsible for accessing and applying new knowledge. They are required to allocate a specific time slot in their daily schedule, often in the morning, to access and study the relevant “lessons learned” from prior operations before engaging their subordinates in new activities of a similar nature. While accessing and reviewing these lessons may appear to be somewhat time consuming, especially given the day-to-day demands that often plague modern managers, this time serves as an important investment in preventing rework and making sound decisions.

Examples of turbocharged processes

We have already reviewed one excellent example of “turbocharging with knowledge” in the Army's “After Action Review” process, but there are several others that can help us understand and apply the concepts:

• A large international petroleum company recently applied turbocharging very successfully. A benchmark study had identified several hundred million dollars of potential savings if they could establish a common process discipline for their capital project planning and development efforts around the world. Although efficiency gains could be achieved by adopting a common process throughout the enterprise and project waste could be reduced by applying more rigid decision checkpoints, the benefits of evolving technologies and experiential learning could only be realized through a new process design feature they called “shared learnings.” “Shared learnings” described the work activities that were used to capture, share and reuse the knowledge from these different capital budgeting efforts. These activities ensured that each project team would have the benefit of evaluating and applying the enterprise's collective knowledge and experience to date.

• One type of capital project that benefited greatly from using “shared learnings” was site remediation. Whenever excessive contamination of the air, water or earth was identified at a refining or transportation site, a project team was formed to assess the situation and, if necessary, design, construct and operate treatment facilities to restore environmental regulatory compliance. These projects could span up to twenty years and cost many millions of dollars. However, the cost and duration of a new remediation project might be dramatically reduced if the knowledge acquired from similar projects, and the
Examples of turbocharged processes, continued

latest form of evolving treatment technologies could be applied. In addition, the application and interpretation of new or complex environmental regulations at other sites could greatly benefit a project team during the early phase of assessing the scope and potential liability of a new incident. Initial experience indicated the anticipated liability exposures and financial accruals to achieve compliance might be reduced as much as 50%. This encouraged a powerful paradigm shift from simply performing remediation efficiently to, instead, using knowledge to manage liability.

• An innovative electronic grocery-shopping service in the Midwest uses intimate knowledge of their customers' buying behaviors to achieve higher customer loyalty and margins. The data from all retail transactions for each customer is captured and analyzed to identify the preferred brands, sizes and typical consumption rates of items purchased. This new knowledge is then interpreted and then applied to “suggest” items that may need to be included in that customer’s next shopping order. The value of using such intimate customer knowledge creates barriers to switching suppliers and minimizes loss of “customer share” to competitive grocery providers.

• A packaged-goods producer in Canada is using the knowledge of actual sales and the competitive environment to keep supply aligned with demand during merchandising promotion periods. By comparing the actual sales and market conditions to the assumptions and volume forecasts for each planned product promotion, observations are drawn that improve the accuracy of the next promotion planning activity in that market. This knowledge was captured and shared with downstream partners at the retail grocery level. The result has been an improvement in service level without an oversupply of inventory in the supply chain. Their retail grocery chain customers are receiving higher revenues and customer satisfaction from their merchandising expenditures.

• An insurance company has discovered the power of turbocharging their underwriting processes with knowledge. The context, risk cases, decisions and actions of each underwriting transaction are captured and made available for application to the next transaction with similar characteristics. As in the product promotion example above, subsequent tracking of actual performance allows comparison to assumptions and risk assessments for additional insights. The additional process steps in the underwriting process to incorporate such learning theoretically increases the cycle time, but the benefits of improved risk management far outweigh the minor efficiency impacts.

Six steps for turbocharging your processes

Continuing our engine analogy, we have identified six basic steps for turbocharging business processes with knowledge. The points under each of the steps are illustrative only, and do not represent all of the activities or considerations. Like any fundamental business transformation, each element of the business system (process, organization and technology) must be addressed in a holistic and balanced
Six steps for turbocharging your processes, continued

way to be successful. And like most business transformation efforts, the organiza-
tional elements regarding culture and behavior will likely be far more challenging to
change than the process or technology elements. That said, the following steps
outline our general approach for turbocharging business processes with knowledge:

1. Select the process (engine)
   - Identify potential processes that have a significant impact on business
     performance
   - Select a knowledge-intensive process and identify its critical knowledge
     requirements
   - Ask process performers when, where, how and by whom new knowledge
     becomes available in the process
   - Assess the potential value of applying this new knowledge in the next
     process cycle.

2. Identify the learning process activities (turbocharger design)
   - Identify when, where, how and to whom the new knowledge should be
     made available
   - Evaluate and select method(s) for reflecting on experience to create new
     knowledge (e.g. project reviews, customer focus groups, knowledge fairs)
   - Evaluate and select method(s) for capturing and storing new knowledge
     (e.g. repositories, competency networks, directories of expertise)
   - Evaluate and select method(s) for accessing and applying new knowledge
     (e.g. search engines, action learning programs, scenario planning sessions)
   - Specify the process activities needed to support the methods selected above.

3. Define the learning process enablers (turbocharger connections)
   - Identify the individual and organizational behavior changes required
   - Identify the technologies required to enable knowledge capture and access
   - Create a plan to provide the enablers and motivate behavior changes.

4. Implement the new process activities and enablers (turbocharger installation
   and test)
   - Integrate and communicate the activities and implications of the learning
     process
   - Define learning process measurements and establish a performance baseline
   - Implement a pilot project of the integrated learning process activities and
     enablers.

5. Deploy and operate the enhanced process (run the turbocharged engine)
   - Deploy process, organizational and technology changes
   - Train all process performers on learning process activities and enablers
   - Operate the enhanced process with a focus on learning activities.

6. Continuously improve the learning process (tune the turbocharged engine)
   - Monitor process performance and make “tuning” adjustments
   - Communicate and celebrate successful learning behavior and results
   - Apply concepts and learning to “turbocharge” additional processes.
Conclusion

Achieving substantial performance improvements without completely redesigning key business processes is within the reach of most businesses. Unless a business process is badly “broken,” its performance can likely be boosted significantly by adding a knowledge turbocharger. Even if a process is badly broken, it can be redesigned to include a knowledge turbocharger. Either way, business performance results should be far superior to the status quo.

Underutilized knowledge is like wasted energy. If your enterprise has not specifically examined its key business processes for the opportunity to leverage knowledge, it is highly probable that knowledge, like exhaust gas, is being wasted. Follow the six steps outlined in this article to identify a high potential process candidate, design an appropriate set of turbo-charging work activities, integrate them into the process and begin to realize the potential performance boost! Like hiring a good mechanic to work on an engine, it may be wise to get some expert assistance with the first knowledge turbocharging project. The application of the concepts and techniques to additional processes should be straightforward. After all, the process of learning will be employed during the initial project to make subsequent projects quicker, smoother and more effective.

Like building a high-performance engine, each of the work activities need to be designed or selected to fit the nature and objectives of the host process. Peak performance will only be achieved when each of the process, organization and technology components is functioning correctly and operating as a balanced system. The results can be impressive and are well worth the effort. Enjoy the ride!

Author information

Dennis Bengtson is a Principal in the Consulting Competency of the IBM Global Services organization. He is currently responsible for leading IBM's Worldwide Knowledge Network for Business Transformation. Dennis specializes in redesigning work processes to create strategic capabilities and satisfy customer imperatives.

Eric Lesser is a Senior Consultant in the Consulting Competency of the IBM Global Services organization. He specializes in Knowledge Management issues and has consulted for a range of clients in this area. Eric’s past consulting experiences includes work in reengineering, organization design and change management.
Anytime, Anyplace Learning on the World Wide Web

J. Olin Campbell, Ph.D., President of Performance Mentor, and Research Associate Professor, Department of Electrical and Computer Engineering, Vanderbilt University, Nashville, Tennessee

There are times when it can be useful to help identify your customers’ needs before they can do it themselves. By publishing this article, we are attempting to identify an emerging need for individual managers and organizations, even though you might not have identified this need yet. We hope you find it useful, and we ask you to consider the implications of this emerging component of success.

Training and development are recognized components of successful organizations, and more companies are paying closer attention to how they are able to educate their employees. Today many organizations are developing their intranets, or utilizing the Internet and World Wide Web, which has created an increased interest in knowing how to use them effectively for organizational and individual learning.

Your input and opinion on this article is of particular importance to us. As we attempt to identify the keys to organizational success, it is essential to create and maintain a forum for discussion and collaboration. To that end, we invite you to visit our Web site at http://www.goalqpc.com/journal. Once there, you can view this entire article with Adobe Acrobat, link directly to some of the organizations mentioned in the article, give feedback on some of the issues it raises, pose questions to the author, editors, and other readers, and join in a discussion group on related topics. We hope you will find it a collaborative learning environment, and visit us often.

As always, we welcome any comments and suggestions. Please feel free to e-mail the editorial staff at: lsmith@shore.net.

With increasing global competition, organizations are requiring more from their people. At the same time, the rate of new knowledge is increasing, and innovations permeate society much more rapidly than in the past. Today many people are considered employable, not employed. An employable person brings a set of skills to an organization for a specified compensation. If an organization needs a particular set of skills, but has trouble finding them, the prices for these skills will increase. Therefore, a major issue for an employer is how to help existing personnel develop and perform in these organizations, without having to send them away to a degree program for several years.

Global competition has increased the need for education

Editor’s note

Global competition has increased the need for education
We also see great demands now on the existing learning systems—in other words, we have learning systems that may not be up to these new requirements. The World Wide Web is fundamentally changing the equation for intellectual capital. When I need to find something, the fastest way to get it is usually to go to the Web.

Two months ago, my son was working on a report on Hawthorne’s short stories for his high school English class. The problem was that the report was due the next day, and none of the libraries had the particular book he needed. I suggested that he try the Web. He quickly found the stories and wrote the report on time.

In many cases if you’re looking for something, it’s right there on the Web. There is a lot of material—some good and some bad. As James J. O’Donnell notes (http://ccat.sas.upenn.edu/jod/virtual.html), there has been no discerning judgement about what to include. However, by using systems like Alta Vista (http://www.altavista.digital.com) or Yahoo (http://www.yahoo.com), you can find relevant information almost immediately, and select what you want. The manner, speed and efficiency of how we do research have fundamentally changed.

In former times, books were precious commodities. More than 2,000 years ago, manuscripts were collected at places like the library at Alexandria in Egypt, one of the greatest places of learning on earth. Once you had a set of manuscripts, scholars would follow. They wanted to be there to use these scarce tools. Soon scholars began to work together, collaborate, and have intellectual discussions. Students began coming to the scholars, who had come to the books that were in the libraries. Those with the greatest libraries and scholars could command high prices—where each college lecture costs the equivalent of a ticket to a Broadway play.

Today, a growing portion of that intellectual capital is available at your desktop. You needn’t so frequently go to a building where the information is stored. There has been a fundamental transformation.

Many of us are working on a method of learning termed Asynchronous Learning Networks (ALN) (http://www.aln.org). As you might guess from the term, it was started by engineers. ALN does not involve simply putting a book up on the Web. It is really about helping people to collaborate, conference, and learn together in a community. It is a widely distributed network of learners and mentors who have immediate access to learning and performance support, but do not need to be online at the same time (hence the term “asynchronous”).

Journal of Innovative Management
An example of a simulated laboratory

It is sometimes said that what counts is the ability to put up books, raw information, or new ideas on the Web. But we can do other things as well. For example, we recently created simulations for an introductory course on electronic circuits. Almost every person who majors in Electrical Engineering must take an introductory course on circuits. If you are running a community college, or if your budget is constrained, it can be difficult to buy the current generation of expensive oscilloscopes, function generators and other equipment you need for the course.

Our solution is to utilize computer software to simulate the equipment, which led to our designing a prototype circuit simulator, with support from the National Science Foundation. It is called Electronic Laboratory Simulator (ELS). The simulation contains working representations of an oscilloscope, a function generator (which creates a signal), and other components.

In the introductory courses, students plug simulated components such as a resistor, a wire, or a capacitor into a simulated circuit board. They build an electronic circuit, inject a signal, measure it, and see what happens. ELS provides tutorials and hints. We have created a virtual circuit board, with virtual signals, components, and measuring devices, all usable at home or in a dorm room.

We've taken this one step further. The program also contains a schematic diagram that shows learners conceptually what is going on when they are plugging in components and seeing the virtual representation on the screen. That is something that does not typically happen in a physical lab.

The bottom line is that one can create a full lab that learners can use anytime and anywhere. They can inject signals, set ranges for the oscilloscope, change components, and see what happens—but at a time and place of their choosing. In time, many types of coaching software and learning simulations will be downloaded from the Web.

Equipment manufacturer benefits from virtual labs

The company that manufactures the equipment we simulate saw our system and became interested in it. They are selling hardware such as oscilloscopes and function generators. But customers had a hard time visualizing the new features of oscilloscopes, what they really do, or how they work. So the company is now using the ELS program to demonstrate their equipment. Prospective buyers can try out the virtual oscilloscope with all of its functions, see how it works, and if they like it, they can buy the actual hardware.

Results of using virtual, simulated labs for education

We next asked ourselves what was happening when people learn using simulated labs instead of the physical equipment. We want to have people accomplish just as much or more learning, but we want to decrease the amount of resources needed to get them to the desired level of expertise. In our case, we tested our results by assigning some people to physical laboratories and other people to simulated labs.
We did a full experimental design with random assignment of subjects. To protect subjects, we fully explained the purpose and procedures, and allowed them to leave the experimental simulated lab and move to a physical lab at any time. Interestingly, we found that many people wanted to move from the physical labs to the simulated labs simply because the simulated labs freed up their schedule. The experiment was repeated several times.

Those who learned using the simulated labs performed as well as people who learned in physical labs, on both the time required to complete the final physical lab and on written tests. With half the students using virtual labs, we eliminated all assigned night and weekend physical labs, and freed up a teaching assistant to mentor students working at odd hours. Decreasing the need for physical labs has major implications for purchases of lab equipment and facilities. Notably, some faculty members are not too interested in changing to the simulated labs.

The bottom line is that we can bring the tools to the learner instead of having the learner come to the tools, and that doing so may allow us to decrease costs for developing equivalent learning performance.

Global competition is increasing for educational institutions in the same way it is increasing for other organizations. The Web can extend the reach of education providers. For example, there is no reason why faculty at Vanderbilt cannot offer a course to someone in China. Conversely, there is no reason why an organization in Australia cannot offer their courses here, which could be in competition with us. Henceforth the competition among learning providers has primarily been regional or has required those in developing countries to live in other countries to obtain higher education. That is changing.

Another element of this technology is that there are low barriers to entry. Almost anyone can put up a Web page and offer a course from their living room. You do not need a $100 million campus, and people can take courses from anywhere in the world with access to the Web. Leaders at some institutions are jumping on this rapidly—particularly among for-profit learning providers and governors who see many new students coming, with limited tax revenues to pay for brick and mortar education institutions. Top research-oriented universities see the possibility to extend their name brands to new markets, while many faculty members at lesser universities are reluctant. Many of those running corporate universities see the salaries and cost of travel for learners as a huge expense that can be moderated by using ALN.

Competition can decrease cost and improve quality, and we are starting to see international standards and certification tests coming up. This testing may help standardize and drive future learning. Novell and Microsoft, among others, are offering certification testing and a variety of preparation materials and courses to prepare for the tests. As businesses, they have already created international standards related to their own products.
Employers are looking for specific capabilities

We are coming to a point where employers want people with a specific set of capabilities, and they want to verify that individuals have the capabilities—not where or how they acquired them. As employers change, so will learning providers.

For example, the University of Phoenix (http://www.uophx.edu/online) is a for-profit accredited university with one of the largest physical campuses of any institution in the United States. Now they are also offering online degree programs. They have been very successful.

The Microsoft certification programs are another example of where we are heading. Microsoft realized that they have an enormous market of people who need to develop a set of skills for use with their products. As a result, Microsoft has put together a set of certifications and related training for those products. Other companies can use those materials to train their students, or trainers can train other trainers.

British Open University (http://www.open.ac.uk/) has for decades been fighting major political battles to open a new way to support learners. Now, they are moving online. The set of structures, ideas, coaching, and tutorials that have been successful for them for many years provide ways to think about designing and developing courses. Now that same set is being applied online.

State governments can no longer afford to build edifices for the rapidly growing college-age population that exists in some states. Some governors have decided to do something different. A coalition of western governors has begun to build alliances with other groups around the country, and around the world, to offer courses by multiple means (e.g., video and online Web). This is a new way of thinking for organizations.

New organizations and education providers are forming

A different way of thinking: employable, instead of employed

Organizations and companies need to understand recent advances in learning tools so they can begin to drive the learning process. For example, a large telecommunications company was about to let go many thousands of employees. The company was negotiating with two strong unions. The union leaders understood that not all of their members were going to continue to work for the company, but that the best people would be working for other companies. The unions negotiated that the company would pay for a telecommunications degree for union members, who could then use their expertise for other companies.

This is a different way of looking at employees. They are employable, but not necessarily employed by a particular company. We seeing businesses driving the requirement for the degrees and the certifications that people will need to be hired.
Technology does not cause learning

There is often a misunderstanding that technology causes learning. This is an incorrect assumption. The Web will not produce better learning. It is simply an enabler. Richard Clark said it long ago—good nutrition comes from vegetables, not from the delivery truck that brings the vegetables. Good learning comes from good learning designs, not from video, computer, e-mail, or other delivery vehicles. However, we can do things today with a computer, on the Web, that we could not have done without a private tutor in days past. New technology affords us the opportunity to use better learning designs. In some cases, as with a private tutor, the capability was there, but few could afford it. Today many more of us can afford computer- and Web-enabled tutorials, which come to your desktop, in your office or home.

Evaluation

We evaluate the learning designs, not the technology. We evaluate the effects of having learners do projects, not the fact that the opportunity came via the Web.

There are five aspects that we look for, based on Frank Mayadas's Five Pillars (1997), which are informed by Steve Ehrmann's Triple Challenge (1994). Ehrmann discusses issues of access, cost, and learning outcomes. Mayadas adds student and faculty satisfaction.

An evaluation may be conducted at five levels, as discussed by Kirkpatrick (1994) and extended by Phillips (1997):

- Level one asks, “How would you rate the instructor and the course, and what would you do to improve it?”
- Level two asks, “How well do learners perform in the course when they finish it?”
- Level three asks, “When they are done with the course, how well do learners perform on the job?”
- Level four asks, “What was the impact when a group of people came back into the organization after having a learning experience?”
- Level five asks, “What was the return on investment in learning and performance support?”

Some initial outcomes

All of these levels of evaluation are important. Few are addressed by most institutions, beyond level one and occasionally level two. When we look at the outcomes from Web-based courses, the early data supports use of anytime, anyplace learning on the Web. It comes from multiple research projects using a variety of learning strategies.

In terms of learning outcomes, Hiltz (1994) finds that virtual classroom courses support equivalent or better mastery in relation to classroom learning. ALN can also impact laboratory courses. For example, Mosterman et al (1994) found that use of the ELS laboratory simulation for electronic circuits significantly decreased...
Some initial outcomes, continued

the time required in a physical laboratory. Subsequent studies at Vanderbilt indicate that we can replace most introductory physical electronic labs with simulated labs. The simulations, with one physical lab for practice, allow learners to perform as well on both written tests and physical labs as those who use all physical labs.

Some individuals are concerned that women will be at a disadvantage for ALN, which uses computers and networks that may be less familiar to them than to men. Ory, Bullock, and Burnaska (1997) at the University of Illinois found no consistent significant gender differences in ratings of either motivation to learn or amount of learning.

Taking a closer look at developing people skills

ALN works well when learning technical subjects, but what of other types of learning? Our first question was about helping people develop people skills. How would they get that through a computer, in relation to a classroom environment? We ran a study to find out.

We compared two scenarios: 1) An expert classroom instructor teaching full time, and 2) A situation where we replace some of the classroom time with other means of learning. In the classroom, we would have a lecture on people skills. In the second scenario, we would replace that lecture with a computer tutorial. In the classroom, the instructor would stand up and model certain people skills, while in the second approach, students would watch demonstrations on video.

We decided to ask people to recognize good interpersonal skills, then rate how well someone else used them, and finally to rehearse the skills themselves. I call this the 3 Rs of interpersonal skills: Recognize, Rate, and Rehearse.

This might be done entirely over the Web. But we wanted the learners to videotape and critique each other. We also wanted a small amount of time for coaching by an expert. We did not want to bring the whole class together, but each person needed to be able to work with a partner. This could happen in families or at work.

Our experimental method was to videotape learners using the skills before and after the learning experience, then randomly assign learners to the classroom or to a treatment consisting of two person teams, computer tutorials, video modeling, and small group practice. The result was that the latter method produced significantly better results than the classroom model, while keeping learner time the same and decreasing instructor time by two thirds. The effect was so strong that the person running the video camera, and raters who did not know what treatments were used or who was in each group, could identify the differences. The research is discussed by Campbell et al (1995).

This study provides an initial indication that it is possible to help learners develop complex interpersonal skills using software tools, in a way that allows expert coaches, people who may be costly and difficult to find, to help more.
A formative evaluation of Vanderbilt workshops

We offer workshops on the Web for people who want to develop ALN. I am impressed by many of the student projects, and we are getting favorable reviews. However, some learners become frustrated because it takes about 15 hours per week in our workshops, and people do not have that much time available.

Novices need step-by-step guidance at times, and it is difficult on our end to keep up with the hundreds of postings to the online conferencing system. We also observed relatively low completion rates, and low social pressure on team members. That means when we have a team collaborate, people may say they will work on something, but they do not deliver. Using ALN I have better visibility on their work because they must frequently post it on the Web, and I can see it as soon as they finish a part of the assignment. However, I cannot look someone in the eye and tell them they have to get that assignment in or else... That mentoring and motivation is part of what people pay for when they take a course instead of buying a book.

Some findings about design of courses on the Web

I use several principles to design courses. First is to build around authentic projects—ideally something the learner is doing at work, or for which they have a strong interest. Second is to build a community through discussions, which we can create online. Third is to provide clear due dates and explanations of assignments. Fourth is to use bi-weekly projects with consistent feedback. Fifth, if possible, one can offer a degree, certification, or other relevant incentive for the course and set of learners. Sixth, we provide near synchronous coaching. If learners have a problem, we do not want them to wait until the next day to get an answer. We try to respond as quickly as possible. Seventh, we provide tutorials on demand. That means that the workshop material follows you to the job, so you have an electronic performance support system—a job aid at your desk, coaching from the materials in the workshop when and where you need help.

Quality metrics

A central feature of ALN is that it supports quality improvement by recording interactions. I use several quality metrics, including:

- Ratings of customer satisfaction
- Percent of learners who complete each assignment within a specified time
- Percent of learners who complete the course

Quality improvement for ALN is not like running a manufacturing plant where you can require that your suppliers provide standardized high-quality inputs. Our learners are our inputs, and they vary in their incoming knowledge, skills, and motivation. Thus we must adjust our process to help individuals learn. I call this “lot size, one learning.”

Learner behavior becomes observable, and we need to provide goals and feedback for learners, but we also have goals and feedback for ourselves as designers, because so much of the learning process is now made explicit and observable.
Quality metrics, continued

The goal is to automate the system of tuning learning support for each person. This is not a new idea. About 20 years ago, Dick Atkinson and Pat Suppes at Stanford University studied computerized learning. They produced huge improvements by estimating the learner's ability for a specific set of tasks, and the difficulty level of each task across many learners. They then selected optimal tasks for each learner. Learners doubled their rate of learning in relation to a control group, with just 10 minutes per day using the system. This work is discussed in Suppes and Zanotti (1996).

Conclusion

The old way to help many learners was to look at all the people who went through the program as one group. Now we can observe individual learning paths for every student, predicting when a person will achieve a skill. Using ALN, we can provide this support on demand, at any time, anyplace. That kind of power can transform productivity.

The bottom line? The Web lowers barriers and introduces international competition. We see quality improvement guiding the design, development, and implementation of online programs. We are in the initial pioneering stages now, and opportunities abound.

References


Author information

Dr. J. Olin Campbell is president of Performance Mentor and Research Associate Professor at Vanderbilt University. As a leading architect of designs for learning, he helps organizations think about how to educate on the World Wide Web.

The ALN Web Group at Vanderbilt administers the Web site for the Sloan Foundation on Asynchronous Learning Networks. The ALN Web is at http://www.aln.org. They offer a free online journal, magazine, moderated online discussions and several other sources of information about this type of learning.

Dr. Campbell holds a Ph.D. from Stanford University in educational psychology, a Master of Divinity from Union Theological Seminary (New York), and a B.A. in psychology from Yale University. He has taught fourth grade as well as graduate students and corporate learners. His honors include the Columbia Teachers College Award for Contributions to Education and ComputerWorld/Smithsonian recognition for visionary use of information technology.

Performance Mentor designs cost effective systems for learning and performance support that use computer simulations and tutorials. The company also consults on rapid, consistent designs for learning. Dr. Campbell has consulted on and designed computer-aided learning systems for Boeing Aerospace, Boeing Commercial Airplanes, AT&T, DuPont, Grumman Aerospace, Army Research Institute, and Nortel. He can be reached at (615) 665-9105, or (615) 322-0110, or via e-mail at olin.campbell@perfmentor.com.
New Directions in Management: The Art of Using Small Changes for Large Effects

Author

Gareth Morgan, Ph.D., Distinguished Research Professor, York University, Toronto, Ontario, Canada

Introduction

This article is based on an edited transcript of a keynote presentation at GOAL/QPC’s annual Knowledge Development Workshop on New Directions in Management, in October, 1997. It focuses on the theme of managing change and the new thinking that is necessary for managing in a turbulent and complex world.

My ideas are drawn from some of the latest insights around the theories of chaos and complexity, and the challenge of operating in a turbulent world that’s trying to find a new form. But I’m not going to be hammering you over the head with a theory. I will share some of the ideas that have emerged out of the theory, which can really make a difference in how we manage.

The old task of management was to control the organization: set the goal, set the objectives, design the structure, recruit the people, fit them into the slots, hold your breath and expect everything to work perfectly.

That world is being completely transformed, particularly through the information technology revolution. No matter what you do, you cannot organize or control this world of electronic technology; it is a self organizing phenomenon.

Therefore, we have to challenge and rethink almost every aspect of management as we’ve known it in the world where you could organize. We can’t organize our organizations anymore. Organization is always a creative process. You must always seek to find images and ideas that can help you manage in a new way.

Using termites as a metaphor

This self organizing world has no predictable future, and new ideas are needed in order to understand how we can function within it. Figure 1 shows a termite colony. Complexity theorists are very fond of termites, because of the way they build their nests. In the tropics, the nests may be 20-25 feet high, marvelous architectural constructions, and they are almost a paradigm case of how order can emerge from chaos.

The ground on which the termites start to build their nest may be quite flat. They begin their work by moving earth in a random fashion. Gradually, distinct
Using termites as a metaphor, continued

Piles of earth begin to emerge. These then become the focus of sustained building activity, resulting in columns located in random positions. These are built to a certain height, then construction stops. When columns emerge that are sufficiently close together, building resumes until they are joined at the top to form a rounded arch. In this way, the termite nest evolves as an increasingly complex structure, with the arch as the basic unit. The approach eventually results in a kind of free-form architecture, composed of interlocking caverns and tunnels that are ventilated, humidity controlled, and beautifully formed.

Order out of chaos. Nests that are always perfect, yet completely random in the way they emerge. I’m describing termites of course, but I could be describing any of the leading entrepreneurs that are trying to manage in this chaotic world and find the future.

An example: Microsoft

Consider Microsoft and Bill Gates as an example of the process. Does Bill Gates know exactly where he’s going? Does he know precisely where Microsoft is going to be in the year 2010? Can he say, by the year 2010, that Microsoft is going to be here or there, doing this or that, and dominating a specific market in a particular way?

Of course not! Bill Gates and Microsoft are partners in an emerging future, launching experiments and prototypes around their vision. Microsoft may have a vision of being a dominant player in the computer business. But it’s not a fixed unchanging vision. Like the termites, the company doesn’t know where it is going to end up.

A powerful image

I think the message of the termite colony and the nest building process reflects exactly the kind of logic and mentality that’s needed to cope with these turbulent times and move forward. However, I make people nervous when I get into termites. After all, it’s not an altogether flattering image to say that managers have to become strategic termites; that they should be inspired by a vision, but be open to the self-organizing potential within the vision and be open to the paths of success that might emerge. But there are clear principles that can be used to engage in this type of organization and management.
Many organizations are stalemated by lots of change, that never really goes anywhere. This new kind of chaotic emergent management practice requires some new skills. I have identified three key themes that challenge a lot of the conventional assumptions about management. To demonstrate, consider Figure 2, which shows two people walking down a path. Let the people represent an organization that's doing an extremely good job trying to set its vision and its mission (the sun shining on the horizon). The organization sets off along the road, but soon encounters a fork in the road. More often than not, it ends up looping back to where it started.

I believe that this is a very common pathology when it comes to managing change. Many organizations are caught in loops that lead to a syndrome of "change, change, change... and going nowhere!" People espouse the desire for change, and they try out a lot of things, but all kinds of factors within the existing situation reinforce the status quo.

If we can understand what makes us loop back to the beginning, instead of going forward toward a new vision, whatever that might be, then we can begin to understand how we, as managers, can position ourselves at the forks in the road and find ways of nudging the system in which we are operating, in a new and more productive direction instead of just reinforcing the old one.

I think there are three main reasons why we go round and round. And there are three sets of action strategies that can make a difference in how we deal with the situation.

#1: Create Quantum Change Incrementally

The first reason we go round and round is that when we want to try to change our organization, we often set out to change the entire organization: "Transform the culture; Transform labor management relations; Reinvent ourselves; Reengineer ourselves. Let's re-create the whole organization. The world out there is changing, so let's change quickly." What happens, if we get into this mentality, which is very much the traditional management mentality? We get into planning. And basically we get buried in plans. It's like the termites trying to predict and plan everything they need to do in advance.
Planning is part of the problem in lots of organizations, because it can create a stalemate in processes that prevents the organization from changing. Planning works well when you've got a stable environment, clear objectives, convergent problems, and consensus about what you're trying to achieve, and where you're trying to go. It is essential for tackling operational problems, like opening a new office and getting a new product to market on time. But it fails miserably when you get into turbulent situations categorized by a lot of ambiguity and where you're not sure what the real problems are and what you need to do. If you try to go forward with a traditional planning approach in this context, you inevitably run into trouble. That is what a lot of organizations are doing, and why they're getting stuck.

Ralph Stacey of the University of Hertfordshire in England offers a model similar to that in Figure 3.

Figure 3. The Complexity Certainty/Agreement Model

Ralph Stacey's complexity model

His idea is that organizations have issues that are very certain or uncertain and for which there might be high or low agreement. When you've got high certainty and high agreement, traditional planning works very well. If you've got low certainty and low agreement, planning fails completely. In between the two states, in the center of the diagram, there is this kind of “edge of chaos” situation—a zone of creativity, where you don't have any real stability, and you don't have complete anarchy. In this zone, the system is always trying to pull you towards anarchy, while traditional management is trying pull you back into an area where we're comfortable. The challenge is to stay somewhere in the middle, and inhabit this zone of creativity at the edge of chaos, and find ways of going forward, even though there is a high degree of uncertainty.
A new interpretation of Deming's principle: The 15% solution

One of the main reasons why traditional management approaches seem to fail in “edge of chaos” situations is explained by extending the research of Dr. W. Edwards Deming, to understand the problems of trying to plan and control unpredictable environments. Deming showed that people only have very limited control over the situation or context they’re operating in, because 85% of the problems are in the broader system, or context. If you take any situation, there’s this 85% that cannot be directly managed. What people typically expect to do with planning, however, is create a 100% transformation in the situation at one jump, instead of thinking along the lines of the Deming idea by trying to target the 15% of influence where individuals and groups can direct effort to where it can really make the major difference. What’s interesting from a chaos theory point of view is that the 15% of influence that one has over a situation is the locus of the self organizing potentials within the system.

So, to summarize, there are two broad theories of change: 1) Create the 100% jump from A to B, or; 2) Mobilize the 15% leverage at each and every level, from each and every person, so that you can begin to create the quantum change that you’re looking for, but incrementally. It appears to me that one of the interesting things that emerges as a result of the new theory of chaos and complexity is a rebirth of some of the implications of Deming’s statistical research. My suggestion is that creating a transformation in our organizations is ultimately about mobilizing as many 15% initiatives as one can, all within some sense of shared vision.

The paradox of vision and uncertainty

One of the paradoxes of modern management is that we have to have some sense of a shared vision of where we are trying to go in our organization, even though it may not be the right one. If you don’t have a sense of vision or direction, and people start to mobilize their 15%, you will end up with complete anarchy.

The edge of chaos requires some sense of vision, but not a vision that confines and channels. When guided by this sense of shared vision, the process can tap into the self-organizing capacities of everyone involved.

The dramatic effects of a 15% change

I want to present an example of how powerful a 15% change can be. In Figure 4 you can see a drawing of a man kneeling in front of an open book, arms outstretched, palms open, with his head looking upward. What’s the immediate image that comes to mind? Who or what is this man, and what is he doing? Could he be a preacher, in a spiritual revival meeting, addressing a congregation in a church?
The dramatic effects of a 15% change, continued

In Figure 5, I've made a 15% change by adding a flower pot balanced on a stick on the end of the man's nose. What is this scene now? What is your interpretation? My preacher has now become a juggler, or an entertainer of some kind.

I've made a 15% change that has transformed the whole context of this image. I think that this is one of the most important management principles in this chaotic, turbulent world. Small 15% changes may seem insignificant. People often say "I have to achieve more than a 15% change." But if you find the right 15%, the effect can be transformational. I call this the "flowerpot principle."

Think about this idea in relation to the reengineering movement, a classic illustration of the desire to create 100% change in a 100% way. Why did 70% of these projects fail? Because they ignored the "15% principle."

In most successful reengineering efforts, managers found what I call successful "flower pots" that stimulated the self-organizing potential in the system in a way that ended up transforming everything. This is a completely different interpretation of how reengineering can be successful. The original proponents of reengineering have written about the failures of reengineering, and the most common explanation is that the technique wasn't used correctly. I believe that reengineering fails when the reengineers don't find the flower pots that are needed to catalyze everything into a new situation.
Reengineering projects and other attempts at large scale change often attract resistance, locking the organization into the status quo. You have to find or create the “flower pots” as a way of going forward.

#2: Managing Context

This brings me to the second key theme of this article—the idea that chaos and complexity theory suggests that a manager’s or a leader’s key task is to create a context that allows and supports new initiatives. They have to create a context that will help employees emerge out of the old organization into the new form.

I can illustrate the theme in this way: Farmers don’t grow crops, they create the conditions under which crops can grow. Successful managers don’t change their organizations; they create the conditions under which organizations will change themselves. Change is not something that is imposed on an organization. It is something that is unleashed from within the self-organizing capacities that are already within the situation. Managers and leaders are context makers!

The 15% principle, when linked to the idea of changing context, becomes the way in which one can get “out of the box” and into the kind of situation that one is seeking to create.

Developing a new skill in context change

This skill of context change is illustrated through the “flower pot principle” and is something that managers have got to master. The key to transforming the context is to use the 15% to create differences that are going to make differences. It seems awfully jargonny when you first present it, but I invite you to write that down and really think about it.

Managers can do this by generating new ideas, providing new information, or changing some key aspect of the existing organization.

Making changes to the simple rules that govern systems

For anyone who is familiar with chaos and complexity, the image of an attractor pattern represents a system that will hold itself in a particular configuration, and then as a result of the small differences that make a big difference, the flower pots, it will begin switching into something else. The point is that once you start to recognize change in these terms, it becomes a question of understanding why we are held by our existing attractors. It is also a question of how can we intervene to catalyze and transform the situation from one pattern into another. This is the challenge of creating transformational change, in my opinion. It’s about trying to find those “flower pots,” intervening in this edge of chaos, so that you can begin to catalyze the transformations that are going to move you towards the vision to which you aspire.

Complex systems are often held together, and acquire patterns, as a result of very simple rules. For example, you’ve all noticed the flocking of birds. Well, the
flocking of birds can be simulated by a computer with only three simple rules: 1) Keep up with your neighbor; 2) Don't bump into each other, and; 3) Don't stray too far away. If you've got those three simple rules, the birds will flock, and hold a pattern.

It's the same in our organizations. There are encoded rules in the culture, politics, and power relations that are holding a system in its configuration.

How do you begin to transform? By changing the rules! Use the “15% principle” here. You don’t have to change them all, you only have to introduce one new rule, or change a powerful old rule, as a way of catalyzing the potential for this organization to find its new form.

#3: Confronting Key Paradoxes

The third theme has to do with managing the paradoxes and contradictions that crop up in our organizations. Organizations undergoing significant change inevitably encounter tensions. For example, managers’ vision for reinventing the business pushes people in one direction, but the established rules and systems lag behind.

For example, here’s a familiar pattern in a lot of organizations: A large company, in response to new competition, commits to becoming entrepreneurial, quality oriented, flexible and transformational. It spends millions of dollars trying to create an entrepreneurial culture, but it doesn’t change the key internal decision-making elements. It wants to be a race horse, but it ultimately remains an elephant.

Another familiar pattern occurs when you have an aspiration for a new understanding of what you’d like your organization to be, but you’ve got a system that’s telling people not to do that. As a result, people receive contradictory messages, being told to:

• innovate, but avoid mistakes
• think long term, but improve productivity now
• reduce costs, but increase morale
• downsize, but improve teamwork
• empower staffs, but be sure they follow corporate rules.

Faced with these contradictions, most people play it safe. Hence, the status quo prevails. Exhortations about the need for change fall on deaf ears, and the best laid plans get immobilized.

Whenever an organization seeks to change itself, employees will always encounter paradoxes or contradictions. Chaos theorists call them bifurcation points. They’re the points at which a system will break into something completely different or sustain itself in the old form.

Managers need to recognize that contradictions are natural to any change process, and must be addressed if significant progress is to be made. Management
Making changes to the simple rules that govern systems, continued

will often deny that a paradox exists because it's not supposed to be there in a rational world. But in a chaotic self-organizing world, paradox is normal. And that's precisely where you can use the 15% principle to create small differences that will make big differences. By rooting out paradoxes, you can create a problem-solving context where the contradictions can be used as levers of change, instead of forces that create stalemate.

Contradictions usually exist because both sides of the issue or problem have validity. The manager is correct in saying more innovation is needed, but mistakes are not; or that empowered employees need to be working within some agreed framework or shared understanding, or anarchy rules.

When you're seeking to create a self-organizing, emergent approach to change, the challenge is to recognize the paradoxes and strains, and find solutions that can integrate both sides of the dilemma. You can target those paradoxes and find the flower pots, the 15% initiatives that can actually flip you into the new context, instead of being imprisoned by the old.

As we continue to operate in an era of rapid change, managers will have to become more skilled in managing paradoxes and competing demands. They will need to master the art of re-framing difficult situations to create contexts that allow learning and innovation to flourish.

Conclusion

When it comes to transformation and change, we're often asked to jump off the cliff, or take that giant leap into the unknown. However, the 15% solution says that we can begin to find the rope ladders, hooks, vision, and supports that can actually transform what can be a very threatening and immobilizing context into a positive and fruitful one.

Author information

Gareth Morgan works on projects associated with the new management and the styles of organization needed to cope with turbulence and change. He is author of seven books, including Images of Organization, Riding the Waves of Change, Creative Organization Theory, and Imaginization: New Mindsets for Seeing, Organizing and Managing. His highly successful Images of Organization is now available in an Executive Edition.

Gareth Morgan has worked with healthcare, business and government organizations throughout Europe and North America, and is involved with several projects on corporate transformation. He is Distinguished Research Professor at York University in Toronto, and has been elected Life Fellow of the International Academy of Management.
The Japan Quality Award: Excellence in Quality Management

Tom Takanashi, Consulting Director, The Japan Research Institute, Limited, Tokyo, Japan

Introduction

The Second Quest Conference of the Japan Quality Award (JQA) was held on February 26 and 27, 1998, in Tokyo. Over 700 participants gathered for learning “Excellence of Management Quality,” which was very similar to the 10th Quest Conference of the Malcolm Baldrige National Quality Award.

The JQA was founded in December 1995. The 1st winner, NEC Semiconductor Group, was presented with the award in 1996.

What has been happening in Japan?

The past decade has clearly shown us that a so-called “business paradigm shift” has already occurred in Japan. There is a nearly unanimous agreement that the nation is at a major turning point, and is beginning to do business with an emerging competitive edge.

Several large changes are occurring that are affecting Japanese managers in all types of companies and industries:

• The so-called Bubble Economy collapsed in 1990
• The global economic structure has dramatically changed due to the progress of a border-less economy and the rapid trade liberalization throughout the world
• Deregulation has remarkably progressed in all industries.

There are other factors influencing this change in management. Incredible advancements in the world of information technology has resulted in nullifying distances among all stakeholders, suppliers, manufacturers, customers, shareholders, members of the community and the government. A new generation of consumers has a more divergent lifestyle and value set, and more diversified needs and wants.

Japanese managers are facing a severe economic condition. They are experiencing a greater opportunity to participate in the global market and economic structure, but must understand the emergent competition and new entries into their industries, implement new information technologies, understand the necessity of more interactive relations with customers and be ready to adopt new management methodologies.
Emergence of Japan Quality Award (JQA)

The Japan Quality Award (JQA) was developed in light of these changing conditions, and to improve the overall operational performance by enhancing value to customers. The three most important reasons for developing the JQA are as follows:

• To recognize excellence of quality management
• To promote the understanding that the key success factor for the future is to change from the traditional way of doing business.
• To prepare a guide for making progress towards excellence in quality management and overall performance in order to improve competitiveness.

In other words, the JQA focuses on enhancing competitiveness with an emphasis on improving quality management. The Japan Quality Award Criteria was designed to promote:

• The awareness that quality management is the most important factor in business for future growth
• The understanding that quality management is measured by customers, employees and society
• The understanding that quality management is represented not only by products and services, but also by a company’s overall business processes
• The understanding that the enhancement of quality management will be achieved by the deployment of a systematic approach to its improvement
• The dissemination of examples of quality management strategies and processes that have produced excellent business results.

Seven Concepts behind the JQA Criteria

The award criteria are built on the following seven key concepts:

1. Quality judged by the customer
2. Senior executives’ leadership
3. Continuous improvement of systems and processes
4. Education and training of human resources and development of skills aligned to strategy
5. Quick response to market/customer needs
6. Partnership and teamwork
7. Commitment to environmental protection and public responsibility

The framework of the JQA assessment criteria, which incorporates the seven concepts, is shown in Figure 1.

The 1998 assessment categories and points are shown in Figure 2.
Figure 1. Framework of the JQA Assessment Criteria

- **System**
  - Driver
    - 1.0 Management vision and leadership
  - 5.0 Process management
    - 6.0 Understanding of and response to customer market
    - 4.0 Development of human resources and learning environment
    - 3.0 Development and deployment of strategy
  - Information Infrastructure
  - Results
    - 8.0 Customer satisfaction
    - 7.0 Business results

Figure 2. The JQA Assessment Categories

1.0 Management vision and leadership (170 total points)
   - 1.1 Mechanism of leadership (100 points)
   - 1.2 Public responsibility and corporate ethics (70 points)
2.0 Sharing and utilization of information (80 total points)
   - 2.1 Selection and sharing (30 points)
   - 2.2 Competitive comparisons and benchmarking (30 points)
   - 2.3 Analysis/utilization of information (20 points)
3.0 Development and deployment of strategy (80 total points)
   - 3.1 Development of strategy (40 points)
   - 3.2 Deployment of strategy (40 points)
4.0 Development of human resources and learning environment (110 total points)
   - 4.1 Planning of human resources development (20 points)
   - 4.2 Learning environment (30 points)
   - 4.3 Employee education, training and self-development (30 points)
   - 4.4 Employee satisfaction (30 points)
5.0 Process management (110 total points)
   - 5.1 Management of operating processes (50 points)
   - 5.2 Management of support processes (30 points)
   - 5.3 Cooperation with suppliers (30 points)
6.0 Understanding of and response to customer/market (150 total points)
   - 6.1 Understanding of customer/market (70 points)
   - 6.2 Response to customers (40 points)
   - 6.3 Clarification to customer satisfaction (40 points)
7.0 Result of corporate activities (200 total points)
   - 7.1 Results of public responsibilities and corporate ethics (40 points)
   - 7.2 Results of development of human resources & learning environment (40 points)
   - 7.3 Results of activities for quality (60 points)
   - 7.4 Results of business (60 points)
8.0 Customer satisfaction (100 total points)
   - 8.1 Customer satisfaction and evaluation in the market (100 points)
Organization

The Japan Quality Award Committee is responsible for the highest decision-making. It evaluates and assesses the award winners, criteria, judges and examiners (see Figure 3).

The JQA Committee consists of the following six members:

Chairman: Shoichi Saba, Advisor, Toshiba
Member: Hajime Karatsu, Professor, Tokai University
Member: Gregory Clark, President, Tama College
Member: Koji Kodama, Chief Director, Central Cash Office of Commerce & Industry
Member: Zenichiro Takahashi, President, Japanese Institute of Certified Public Accountants
Member: Hanae Mori, Representative Director & Chairman of the Board, Mori Inc.

The Board of Judges makes award recommendations to the JQA Committee. The Examiners Screening Committee recommends examiner candidates to the JQA Committee. The Award Criteria Revision Committee evaluates the award program and presents the draft of revised award criteria to the JQA Committee. The Board of Examiners evaluates the award application report and prepares feedback reports for applicants. The board consists of senior examiners, examiners and assistant examiners.
Founders of the JQA Council are as follows:
Asahi & Company, Asahi Breweries, Canon, Daiichi Life Insurance, Fuji
Xerox, Hitachi, IBM Japan, Japan Research Institute, JUSCO, Kirin Brewery, NEC,
NTT, Ricoh, Sony, Terumo, Toto, Toyo Communicating Equipment, Sanwa
Research Institute, JPC/SED.

Award Comparison

JQA is shown in comparison to the Malcolm Baldrige National Quality Award
and the European Quality Award in Figure 4 below.

<table>
<thead>
<tr>
<th>Name of award</th>
<th>Malcolm Baldrige National Quality Award</th>
<th>European Quality Award</th>
<th>Japan Quality Award</th>
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</thead>
<tbody>
<tr>
<td>Year introduced</td>
<td>1987</td>
<td>1992</td>
<td>1995</td>
</tr>
<tr>
<td>Who can apply</td>
<td>Any for-profit businesses headquartered in the United States</td>
<td>Any European company that has already applied to its own country’s quality award</td>
<td>Any for-profit Japanese-owned company</td>
</tr>
<tr>
<td>Type of awards (# of awards)</td>
<td>Manufacturing (2) Service (2) Small business (2)</td>
<td>Large business or public sector (1) Small and medium size enterprises (1)</td>
<td>Manufacturing (2) Service (2) Medium and small business (2)</td>
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<td># of categories</td>
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<td># of examination items</td>
<td>20</td>
<td>32 (Large) 22 (Small and medium)</td>
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<tr>
<td>Organization that owns criteria</td>
<td>U.S. Department of Commerce</td>
<td>European Foundation for Quality Management</td>
<td>Japan Quality Award Council</td>
</tr>
</tbody>
</table>

Winners’ highlights

The 1997 award ceremony was held on December 9 at the Tokyo Prince Hotel
in Shiba, Tokyo. There were 10 applicants for the award, whose scoring system is
very similar to the Baldrige Award. The following companies were selected as 1997 winners.

1. Asahi Breweries, Ltd. (Yuzo Seto, President), Manufacturing Category.

Asahi grasped the customer needs quite appropriately, and quickly responded
by creating a new management system that was broadly welcomed. They steadily
obtained a good reputation from their customers, and have been making rapid
improvements in their financial results.
The status quo for the brewing industry has changed remarkably in Japan. There has been a change in the distribution structure, a shift of sales channels from small liquor shops to supermarkets and convenience stores. Customers’ tastes have diversified and multiplied, due to deregulation and increased competition by imported beers and other alcoholic beverages.

The following business performance points were major reasons for the award:

• There are three basic philosophies and action policies of “quality first,” “quality has the highest priority,” and “respond to the customers’ hearts.”
• The field-oriented initiative and leadership by management based on the concept of “the signs of change lie in the field.”
• An open and frank communication culture, as well as the common possession of information, by utilizing the most advanced devices and systems.
• Taking up “freshness” as the most important theme and having a consistent management strategy and thorough process management.
• Cooperative relationships with suppliers based on co-existence and co-prosperity.
• Tackling the problems of the decrease of industrial waste/recycling/energy-saving as a forerunner based on the basic policy of environmental maintenance.
• Top-level improvement of business results and evaluation from the market and society within the beer industry.

Asahi’s annual sales rose from ¥870 billion in 1995 to ¥972 billion (about $7.5 billion) in 1997. Operating profits rose from ¥619 million in 1995 to ¥840 million in 1997. Total numbers of employees were 4,223 at the end of 1997. The business centers on the manufacturing and sales of beer and other alcoholic beverages. The beer department, with the “Asahi Super-Dry” as its main merchandise, accounts for about 99% of its sales.

“Asahi Super-Dry” was first sold in 1987 as the first “dry/draft beer” in Japan. Since then, Asahi has promoted “a refined, clear taste” and has greatly changed the course of the beer market.

Asahi grew from a 3.2% market share in 1987 to 22.4% market share in 1997. Sales of “Super-Dry” went from 13.5 million cases in 1987 to 170.6 million cases in 1997. Total beer sales in Japan for Asahi grew from 418.8 million cases in 1987 to 533.8 million cases in 1997. The cumulative amount of sales exceeded the 1 billion case mark in 1996.

2. Chiba Isumi Golf Club (Shigemasa Kato, Director and General Manager) Medium and Small Business Category.

Chiba Isumi Golf Club faced a long recession in the Japanese economy, an unfavorable environment such as the maturity of the golf industry (reaching a point where total sales for the industry are no longer growing), and a disadvantage in the
location of their golf course. In spite of these conditions, Chiba Isumi developed a thorough customer service plan, leading to a high evaluation from their members, and thus increasing their market share and improving their financial results.

Isumi adopted the management concept of making the golf club loved and trusted by everyone around it. Top managers took the initiative in making this concept understood by every employee. Although the location of this golf course is not favorable geographically, Isumi overcame the disadvantage by improving customer services. This lead to the improvement of customer evaluation, the expansion of market share, and improvements in financial performance.

Specific customer service improvements included improving green conditions, tee ground conditions, fairway conditions, sand and bunker conditions, and employee service.

The following business performance points were major reasons for the award:

- The strong leadership was driven to make the concept of their customer-first policy known to everybody in Isumi.
- The human resources development was successful based on the self-development program concept.
- A variety of education and training is available to foster initiative and creativity.
- A full-scale customer survey was conducted to directly contribute to customer satisfaction.
- Every employee listened to customers’ opinions.
- Small group activity was promoted to achieve total participation, which improved service quality.
- Service quality was standardized based on 47 kinds of manuals.
- Benchmarking was introduced and utilized effectively, including those in different sectors and across industries.
- The service level was checked on a company-wide scale through the “ARIGATO (Thank You) Campaign.”
- Customer satisfaction and business performance were kept at the highest level of the industry.

Isumi is one of the business divisions of Green Club Co., Ltd., which operates golf courses, marinas, tennis courts, rental country houses and other leisure activities and property. The Green Club in turn is part of the Nihon Kotsu Group, which is involved with transportation, tourism, leisure industries, hotels, restaurants, sales of petroleum products, driving schools, information processing, dispatch of temporary staffing, and other service businesses. The core of this group is Nihon Kotsu Co., Ltd., a well-established company in the transportation industry for hired cars, taxies, and sightseeing buses.
The Isumi golf course is located in Chiba, 90 km (about 55 miles) away from the center of Tokyo. There are 2,713 permanent members and 953 weekday members. The number of players exceeds 70,000 a year.

Conclusion

The third year of the JQA has begun with several important initiatives, such as the selection of new examiners for 1998, training of new self-assessors, re-training of qualified self-assessors, training of benchmarking instructors, and seminars led by past winners.

American companies have benchmarked Japanese companies with regard to Quality Control, the Deming Prize, and other management techniques. Now it seems that Japanese companies are ready for new management techniques such as the Baldrige Award, TQM, ISO 9000, ISO 14000 and others. Japanese companies are already benchmarking American companies' best practices, which can be a humbling but wise experience. Information sharing in the world is a key for Japanese companies to be strongly recognized by the world in terms of global base. Sharing with and learning from American companies' success, the sun is rising again in the Far East.

Author Information

For over 20 years, Mr. Takanashi has served clients of Ernst & Young Tokyo (formerly Arthur Young) in an audit and/or consulting capacity, including work on strategic information systems, corporate strategies, operational consulting, and overseas investments. He joined Arthur Young Tokyo in 1970 as a member of its auditing staff. He was promoted to partner in 1981 and appointed Director of its Management Consulting Division in 1983. In 1993, Mr. Takanashi served Arthur Andersen Group as a partner, following the merger between Asahi & Co. and Arthur Andersen-Japan.

Since July, 1995, Mr. Takanashi has been the coordinator of “Benchmarking Promotional Conference,” the internal organization of the “Japan Productivity Center for Socio-Economic Development.” He has been with The Japan Research Institute Ltd., one of the largest Think Tanks in Japan, since April, 1995. He has been a member of the Supporting Committee for the Japan Quality Award since December, 1995, and a judge since 1996.

Mr. Takanashi has actively served the professional and business community in various roles, including: Director: Hong Kong Japan Chamber of Commerce and Industry; Director: Hong Kong Japanese Club; Director: Japan Association of Business Analysis; Member: Technical Subcommittee of the 13th World Congress of Accountants; Chairman: JICPA (Japan Institute of Certified Public Accountants) Information Systems Committee; Overseas Investment Advisor: Japan Small Business Corporation (Governmental Agency); Director: Japan Hong Kong Society; Director: Japan Society for Finance Management; Vice Chairman: JICPA Management Study Committee; Director: Japan
Mr. Takanashi received a Bachelor of Arts in Economics from Keio University in 1968 and went on to graduate work in Accounting at Waseda University in 1969. In 1983, he completed the Advanced Management Program at Harvard Graduate School of Business Administration, in Boston.

Mr. Takanashi is author or co-author of more than 35 publications on Quality Management, Business Process Reengineering (BPR), Benchmarking, Total Quality Management (TQM), Strategic Management, Strategic Information Systems (SIS), Overseas Investment Strategies and other business-related subjects. He lives with his wife and two sons in Tokyo, Japan.
Merrill Lynch Credit Corporation
Malcolm Baldrige National Quality Award Winner, 1997

Leadership

Michael A. Johnston—True greatness begins with passion. Leadership at Merrill Lynch Credit Corporation (MLCC) is responsible for fostering a spirit of empowerment, dedication, and a passion for excellence. Leadership creates an engaged working environment, an attitude of working together toward a common goal. At MLCC, we believe that a leader is not someone who gets the job done, but rather someone who encourages people to believe in themselves so that they can do the job.

Background: Innovation in credit management

In 1981 MLCC opened its operations in Stamford, Connecticut and is now located in Jacksonville, Florida. We are a subsidiary of one of the largest financial firms in the world, Merrill Lynch & Co., Inc., with over one trillion dollars of client assets. Our parent company is dedicated to providing its clients with exceptional planning-based products and services through over 15,000 Financial Consultants worldwide. MLCC was established to provide Merrill Lynch clients with the same innovation in credit management that the Cash Management Account (CMA®) provided for asset management. Early on, we understood that managing what you owe is just as important as managing what you own. We began by pioneering the home-equity line of credit that is prevalent in the marketplace today. Over time, we created a range of credit solutions available throughout the U.S. to address all of our clients’ credit needs. Ultimately, this strategy of total balance sheet management was adopted and embraced by our corporate parent. At Merrill Lynch we sell solutions, not products. We create relationships.

Growing and managing growth

We’ve come a long way since 1981. Today MLCC has over 900 partners. Through product expansion and development and by further penetration of the Merrill Lynch client base, our loan originations have also increased significantly. In
Growing and managing growth, continued

1997 we originated $4.2 billion in mortgages, a 21% increase over 1996. We expect to have similar, if not better, results and increases throughout 1998.

As our mortgage volume increased, so did our mortgage-servicing portfolio. Currently we service over $10 billion of mortgages and home equity lines of credit. By embracing quality, focusing on solid business planning and on continuous improvement, we’ve been able to effectively manage this growth. Over the last four years our pre-tax earnings had a compounded annual growth rate of 34%.

Our vision and mission

We would not have been able to grow our business at this rapid pace without our long-term vision for the future. Our vision is simple: We want to be the preeminent provider of planning-based liability management solutions to our clients. Our mission is just as clear: To provide Financial Consultants and clients with superior service, products, and knowledge. We want to maximize shareholder value and investor return by the continued growth of the Merrill Lynch client base. And we want to provide a dynamic work environment that fosters growth, participation, and recognition for all MLCC partners.

Partners, not employees

All of us work as a team toward a common goal. MLCC does not have employees, it has partners. To bind this partnership we’ve established a covenant with each partner about what it means to be an MLCC partner:

Partners have a stake in the company’s success. You have accountability for your role. You are committed to the mission, goals, and objectives of the company. You share and constantly practice the company’s values. You believe that the company’s success is your success. Doing the job right is more important than getting the job done. Your performance will be measured, you will be accountable, and you will be recognized.

MLCC values and principles

All that we do revolves around our key stakeholders: the clients, the partners, and the shareholders. We’ve created a value-based culture with these stakeholders at the center. Our values were born out of our heritage, the Merrill Lynch principles. They guide our actions, behaviors, and our passion for excellence. They provide our partners with a framework that fosters teamwork and empowerment.

Our values—

• Integrity— We always do what is morally and ethically right.
• Innovation— We always look for ways to improve the work process; we don’t wait for someone else to tell us how to do it.
• Commitment— We are intellectually and emotionally bound to Merrill Lynch critical goals and strategies.
**Principles and values, continued**

- **Personal satisfaction**—We're proud to be a part of MLCC. We like to have fun in our jobs.
- **Partnership**—We work in a cooperative effort so that we can achieve our goals and maximize client, partner, and shareholder satisfaction.
- **Client focus**—Our attention and actions are always focused on the client; we strive together to meet their credit needs in a professional and efficient manner.
- **Quality**—We have a passion for excellence in everything we do. Our work is marked with a distinction unparalleled in our industry.

Our principles are—

- Client Focus
- Teamwork
- Integrity
- Respect for the Individual
- Responsible Citizenship

These values and principles have guided us in becoming who we are today, they help us build on what we were yesterday, and shape who we will be tomorrow. MLCC leaders are committed to and are personally involved in communicating and reinforcing our values, direction, and performance expectations.

**Managing change**

Managing change is one of the greatest challenges we face as an organization. Change can come in two ways: someone can force you to change, or you can make change happen. When change is done to you, it can be debilitating. But when it is done by you it can be exhilarating. At MLCC we believe our leaders must be champions for change. They also must be champions for all that must not change—our principles and our values.

**Seven leadership activities**

It is critical as an organization that we have a system to provide and further develop the leadership we need to manage that change. We created a simple and easily understood system with the help of Morris & Ward International that all of our partners are able to use. We refer to it as the seven leadership activities:

1. **Commitment and focus**—Leadership ensures that all partners know and understand, through the business planning process, the firm’s direction and how they contribute to our current and future successes. All partners focus on continuous improvement daily and understand that their success is the firm’s success.

2. **Organization and planning**—Our business growth planning process helps to ensure that all partners’ performance objectives are aligned to the goals and objectives of the company. Through our annual business planning process, partners are engaged in the development and implementation of these objectives. They are consistently deployed throughout the organization, from the boardroom to the mailroom.
Seven leadership activities, continued

3. Education and training—As leaders it is our job to make sure that the partners have the tools they need to do their jobs properly. These include skill development, technical training, and personal career development.

4. Measuring and ranking—It is important that the organization reviews progress and works on a regular, on-going basis to ensure desired results are achieved. When decisions need to be made, they must be made based on facts. Leave emotions at the door.

5. Communications and sharing—A successful leadership system depends on constant communication and sharing of information. Once a quarter we assemble all our partners and share with them the progress we made toward the plan, current events and their impact on MLCC. We also celebrate our successes, and discuss areas that need improvement. We have an open-door policy, and other open communications programs.

6. Problem management and prevention—Continuous improvement is not possible without continuous learning. All partners of Merrill Lynch Credit Corporation have been trained in a Quality and Improvement Control story, our problem-solving process taught to us by Bob Seemer of Competitive Technologies. The QIC story is one of the many tools we use to analyze and solve our problems and it has proven to be very effective.

7. Recognition and rewards—There are many forms of rewards and recognition at MLCC. We have formal programs; an example is the President’s Award, where winners receive $2,000 for their suggestions on improving process, saving money, and improving efficiency. The Partner-to-Partner notes program is an example of simple, informal recognition. They are a simple thank-you and pat on the back, made in recognition that we are working together.

Our responsibility includes the community

Our passion for excellence is just not limited to what we do in the office. We believe that our responsibility reaches outside of the office into our community. We are committed to giving back to the community through our time, our talent, and our treasure.

Strategic Planning

Emilie Christenson—A few years ago our partners told us, through our annual partner survey and other feedback mechanisms, that they didn’t know where we were going and how we were planning to get there as an organization. They told us they didn’t fully understand our mission and our strategy for achieving our long-term goals. They also said that we weren’t doing a very good job communicating with them.

By listening to our partners, we learned. We learned that they needed to be more involved in the business. They needed more information to do their jobs, they
Listening to our partners, continued

wanted to understand the firm’s vision of the future, and they wanted to know how we planned to get there.

Planning the Business Together

The business-planning process that we developed as a result addressed many of these issues. We called this process Planning the Business Together. We built a business planning process where all partners are engaged: they all know and understand our shared vision and mission. They helped us develop key strategies and tactics, and all partners now understand how their roles contribute to the success of MLCC. The MLCC business planning process is a highly refined process that is used to create and deploy long-term strategic and short-term tactical plans. The process also ensures our alignment with our parent company’s vision and strategies for our future success.

Business planning process

To better manage our growth, we reorganized our entire organization based on core and support processes rather than functional areas. This was done in order to become client-, partner-, and shareholder driven. Our new organization facilitated business planning and properly aligned the core and support process groups in the organization so that we could achieve the vision and mission as shown in Figure 1. We can now focus resources on key business needs.

Figure 1. Core/Support Process Alignment

Ultimately, the planning process changed the way our business was managed. It helped us identify top business issues, make fact-based decisions, and recognize our partners as the energy sources of the business actively involving them in our growth and our future success.

Over the past two years we’ve worked very hard to refine the process and as a
Planning begins with strategic module and SWOT analysis

result, we think we've created a winning management system. The business planning process is outlined in Figure 2. It begins with what we call the strategic module and SWOT analysis. The strategic module is a comprehensive summary of the external environment. It includes an analysis of customer needs and requirements, economic and technology trends, the regulatory environment, and competitive comparisons. The module also includes an internal analysis of our parent company's target market, alignment to our parent company's strategies, and stakeholder satisfaction.

The SWOT analysis, which stands for strengths, weaknesses, opportunities, and threats, is an internal assessment of MLCC's required competencies and the degree to which these competencies are being met. Our business development and planning work team assists the organization in developing SWOT analyses by core and support process groups. They collect and review feedback from the leadership team and all MLCC partners, and identify key business imperatives or strategies. Imperatives are issues that absolutely must be addressed in order to maintain or improve MLCC's competitive position.

Ultimately, a summation of this information is presented to the senior leadership team, which develops draft Critical Few Objectives, or CFOs, for our company. CFOs are what we hope to achieve in the coming year. CFOs are categorized into the four long-term focus groups of client satisfaction, partner satisfaction, business growth, and shareholder value to ensure our key stakeholders are represented in the business plan. Once our senior leaders develop the corporate level CFOs, champions are assigned at the vice presidential level based on responsibility and expertise.
Role of CFO Champions

During the business planning process the champions further define the corporate level CFOs, and develop performance measures and targets. The champion's role is to track the deployment of each CFO and ensure sufficient activities and resources are in place to achieve short and long-term targets. The CFO Business Priority Matrix, shown in Figure 3, is then created and communicated to all partners to ensure alignment of core and support process teams. CFOs are strictly measured. Linkage at all levels is quantitative and the impact of any activity's target can be assessed against the overall objectives of MLCC. During plan implementation our champions review and communicate “progress to plan” on a monthly basis. On a quarterly basis, they provide our senior leadership team with a much more detailed status update.

Figure 3. Business Priority Matrix—Example

<table>
<thead>
<tr>
<th>Long-Term Focus</th>
<th>Critical Few Objectives Requirements (Form 1)</th>
<th>Resources</th>
<th>Key Performance Measures</th>
<th>Targets</th>
<th>Core Process No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 Client Satisfaction</td>
<td>1.1 Increase end-user satisfaction</td>
<td>-</td>
<td>% Good to excellent/Excellent</td>
<td>-</td>
<td>1.0 2.0 3.0 4.0 5.0 6.0 7.0 8.0</td>
</tr>
<tr>
<td>1.2 Increase field/FC satisfaction</td>
<td>-</td>
<td>% Good to excellent/Excellent</td>
<td>-</td>
<td>0 0 0 0</td>
<td></td>
</tr>
<tr>
<td>1.3 Increase internal client satisfaction</td>
<td>-</td>
<td>% Good to excellent/Excellent</td>
<td>-</td>
<td>0 0 0 0</td>
<td></td>
</tr>
<tr>
<td>2.0 Partner Satisfaction</td>
<td>2.1 Increase Partner satisfaction</td>
<td>-</td>
<td>% Overall partner satisfaction</td>
<td>-</td>
<td>0 0 0 0</td>
</tr>
<tr>
<td>2.2 Reduce partner turnover</td>
<td>-</td>
<td>% Turnover</td>
<td>-</td>
<td>0 0 0 0</td>
<td></td>
</tr>
</tbody>
</table>

- Proprietary Information Deleted
* = High Impact o = Medium Impact Blank = Low Impact

Preliminary plan and budget

The CFOs are shared with the core and support process groups throughout the organization. Preliminary plans and budgets are developed and CFOs, key activities, performance measures, and targets are discussed and agreed upon for the process groups. Partner workshops are conducted to ensure bottom-up input throughout the company.

Finalized plan and individual performance management plans

After all of our partners have had a chance to both give and receive feedback, our business plan and our budget are finalized. This information is then incorporated into individual performance management plans. We use these plans to evaluate each individual partner's performance to plan twice a year. They help our leaders and our partners identify opportunities for personal growth and business improvement, and are directly linked to compensation.

Plan Review

Once the plan is reviewed and agreed upon during the “Pre-Launch Plan Review and Handshake,” it is then communicated to all partners. We review
Plan review

progress versus plan at monthly senior leadership meetings, at quarterly CFO champion meetings with our senior leadership team, and at quarterly partnership meetings with all MLCC partners. These meetings also reinforce the senior leadership's commitment to partner involvement and the planning process. They provide MLCC with an opportunity to review and discuss recovery plans for missed targets so we can ensure that desired results are in fact achieved.

Conclusion

Dr. Robert Rotella, Director of Sport Psychology at the University of Virginia says that every football game is won or lost because of one or two plays in the game. The only problem is people never know which one. Our business plan is like the MLCC playbook. It's our way of aligning our resources and ourselves to achieve the goals and objectives that we've set for the organization. If we're doing the best we can possibly do by following our plan and playing to win, we'll continue to be successful.

Customer and Market Focus

Hal Minot—Why is it that so many organizations are so challenged in terms of putting the client first? And why do we all have to constantly remind ourselves that the customers' needs are the center of our universe? The answer I think is surprisingly simple and yet very tough to put into practice.

The answer is that understanding customer requirements and how to meet them means changing what we do and how we do it. Most of us, frankly, have a hard time coming to work and doing something different today from what we had been very good at doing the day before.

If we don't change, however, we end up driving the car by looking through the rear view mirror. If you do what you've always done, you'll go where you've always gone, and you'll get what you always gotten. You may even get a lot less than that, because there are plenty of competitors who are looking through the windshield, and the road map they have is based on client needs.

The view from 100,000 feet

Let me share with you three perspectives on how we focus on customer need at MLCC. We will survey the area from the 100,000-foot level, from 10,000 feet, then at ground level.

We at MLCC represent the liability side of the client's balance sheet. Our vision is to be the preeminent provider of planning-based liability management solutions. Planning-based means that we have to know our clients, know what they need, and how they want to get it. Solutions mean that we successfully meet these needs with the products we offer and with processes that deliver them.

MLCC works with Merrill Lynch's Financial Consultants as partners and
distribution channels for customer profiling and financial planning. MLCC also uses Merrill Lynch client segments in our approach to determine client needs and requirements, and to develop and market products and services. We identify and weigh client needs not only by segment, but also by overall credit need. This information is then used by our core processes to determine our performance measures and standards.

MLCC’s own value system and the guiding principles of our parent further reinforce our vision. When we ask ourselves: “What business are we in?” If the answer is meeting client needs and that these needs drive and define what we do, we believe we are very close to the right answer. Granted, understanding what our strengths are compared to our competitors is important, but that is a perspective of the past. Meeting client needs plots the direction for the future.

Let’s move down to the 10,000-foot level where we can start seeing the landscape a little better. The process we use to understand client requirements and the context of competition in the marketplace is what we call the Voice of the Client process. Actually, we listen to many voices and have many listening posts. Some of them we review on a daily basis, some of them on an annual basis. The trick is to have a process to assimilate what would otherwise be a Tower of Babel, so that clients’ needs are clearly articulated throughout the organization. We then know that the solutions we offer, and how we offer them, are the best possible in the marketplace.

Let me share with you a few of the key aspects of the Voice of the Client Process. The inputs we gather are from client complaints, our partners, vendors, the sales force, benchmarks, and secondary research. This process prioritizes the primary drivers of satisfaction and value, as well as product needs, for each client segment and for the cross-segmentation of credit categories (home financing, personal credit, and investment financing). The information gathered is fed into the business-planning process, including the SWOT analysis and the resulting CFOs that Emilie Christenson mentioned.

Figure 4 on the following page shows two important components of the Voice of the Client Process: complaints and the client requirements team. One of the most revealing inputs or voices are complaints. Every month we aggregate complaints and stratify them by source and category. Sudden changes are prioritized, and process managers review them for immediate improvement opportunities. Client complaints are tracked and have stringent requirements for their resolution. Competitor threats and changes are reviewed by senior partners for immediate response.
The client requirements team reviews long-term issues and input from other listening posts, particularly areas involving research. This team represents key process owners at MLCC, including Marketing and Business Development, and meets throughout the year to review client needs data and evaluate the listening channels. Are other ones needed? Could the data-gathering techniques and questions asked be improved to get a better sense of what the client wants? The team also identifies product features and performance gaps, as well as business opportunities overall. Finally, the client requirements team’s input is continuously used by the core process owners to identify service improvements, product enhancements, and to develop new products. It provides key input to the strategic planning process to develop and monitor CFOs.

At ground level, Figure 5 shows MLCC’s approach that assures client needs are voiced and met at every level throughout the organization. First, clients needs are identified at ground level.
Client need identified at ground level, continued

identified using the Voice of the Client process for each segment. For example, responsiveness is a core need for all the segments that we serve. We segment not only by client type, but also by client use. The highest requirement on responsiveness is for fast, efficient, approval processing, which is particularly important for home financing and personal credit. Each core process owner defines the impact that they have on meeting this client requirement. The performance standard set for underwriting is about 1.2 days. We then continually evaluate the report by key performance indicators. Client satisfaction is measured directly by client surveys and indirectly by field management and consultant surveys.

Conclusion

Change is the inevitable result of addressing client needs. Pritchard and Pound argue persuasively for championing change throughout your organization. They believe more of the same may just add stress and tension. It maybe stressful having to make all the necessary adjustments, but if adapting is tough duty, just see how difficult it is if it's not done. So be champions for the client. Be champions for change. And be champions for the Baldrige process.

Information & Analysis

Thomas Mackin—When I think about how organizations handle information, I am struck by the similarities between them and an old movie called The Blob. In the movie this blob from outer space threatened to consume an entire town. It was only when the town's people worked together to figure out how to control it that they were able to overcome the blob and save the town.

All organizations have a similar challenge in the information age. There’s a huge amount of information that must be organized. At Merrill Lynch, we figured out how to control this information blob by managing the information and prioritizing it according to what supports our vision.

M, Q, and P Measures

We look for what supports our clients, our partners, and our shareholders, by first tracking 14 key measures, called M measures, that describe to us the company's overall health. The measures include overall client satisfaction, partner satisfaction, and various financial measures. Targets for these M measures are connected to our CFOs.

We track progress toward these objectives through what we call end of process measures or Q measures that are aligned to roll up to the M measures. We also look at early warning indicators in the in-process measures that we call P measures. The P measures will tell us how well the Q measures at the end of the process will perform, and those in-turn will tell us how well our critical M measures will perform.

Process improvement

The key user requirements are determined through the involvement of some very important people in our company called business analysts. Business analysts are
Process improvement,
continued
dedicated to our core and support processes. They work jointly with our specially trained quality specialists, or application specialists, to blend process improvements with technology enhancements and to automate the processes that make sense to automate. They must work well together to make sure that our processes are better, smarter, and faster. Then we put the technology in place. We don’t want to automate bad processes.

Our business planning process drives the data and information management improvement. All of our partners are involved in the business planning process; it is through this involvement that we learn what they need so that we can prioritize the information enhancements.

High-level data requirements are evaluated regularly through the Monthly Management Report, produced by each of our groups, and reviewed by our CEO and all of our group managers. During these reviews, our executives discuss and prioritize our information needs; later we’ll work with business analysts to deploy new technology initiatives. Application specialists also lead what we call Quality and Improvement Control stories, or QIC stories, which generate ideas for improvement, which may involve new technology or eliminating excess reviews, or avoiding rework loops.

We also conduct process management workshops that look at processes to make sure they’re sensible. We can then eliminate some of the rework loops or problems that occur in those processes. After improvements are made, business analysts assess how well things were implemented in order to meet stakeholders needs and make adjustments. At the same time our application specialists document lessons learned, so that we can apply those across the company and standardize them.

Benchmarking and competitive analysis

We know that sometimes the best source for information is outside the organization. MLCC uses a 10-step process for benchmarking and competitive analysis. Application specialists have documented our benchmarking process and created a binder that we call the Benchmarking Toolbox. All partners at MLCC can use this tool box to conduct a benchmarking project from start to finish. Benchmarking needs are established by evaluating their linkage to CFOs, stakeholder satisfaction, and team needs. Process improvement plans are driven by benchmarking. Application specialists prepare a quarterly report for executive management that updates them on all of our benchmarking initiatives throughout the company and also makes recommendations for additional quality improvement projects. Application specialists are also responsible for ensuring that our benchmarking studies are linked to MLCC strategy, linked to the business plan, and that the comparisons we do are to the best-in-class organizations. Our training program, the Leadership Excellence Program, was designed after benchmarking a Malcolm Baldrige National Quality Award winner.
Once we have defined and gathered information, we apply a process that uses it. All eight groups in the company use the Monthly Management Report (MMR) to report progress to the executive team and the rest of the company. It's the primary way that we track how well we are doing in our business. The MMR reflects, analyzes, and communicates performance. It's a key analytical tool and also a diagnostic tool because it clearly identifies the gaps between where we want to be in our business plan and where we actually are. The leadership team meets monthly with our CEO and President, reviews the results from the MMR, and initiates company-level improvement plans. When each leader goes back to his group, he has a comprehensive view of the whole organization and can make decisions with the whole company in mind.

After the senior executives have met, performance review sessions are held at all levels of the company to assess progress towards goals. Managers analyze and review results to create performance priorities to align with CFOs. The MMR is used to decide if the business plan needs to be adjusted, for example, or if some CFOs need to be tweaked a little in order to get back on track.

About two years ago our focus on continuous improvement led us to initiate a gap analysis to improve our monthly reviews. A gap analysis allows us to identify whether we are meeting our goals and also the root causes if we're falling short. Sometimes, if we're way ahead of target, it identifies the root causes for that. Most importantly though, the gap analysis calls for identifying counter measures to correct any areas where we didn't reach target.

We bring the involvement of partners full circle at the end of each quarter when we report the results of how we're doing versus plan to all of our partners at a quarterly partnership meeting. It is important that everyone hears at the same time how the organization is performing.

Process Management

Robert Mickler — We look at process management as a process map, a map to success. Our process management maps are as simple or as detailed as we need them to be. A macro look at process management shows the whole company at a glance, including the macro level measures of the processes. A more detailed view shows the department level and individual partner processes and the measures that align to them. These maps are an important communications tool that show us how to quickly and clearly get from point A to point B in our operations.

One of the keys to the success of MLCC is that every one of our partners knows where they fit into the organization. They know where their job is located on the process map—at the macro level or the department level. They share information with the other departments, so that, for instance, those of us in lending services know what's going on in the sales department. Linkage between each of our departments, our processes, and the measures that attach to those processes is key to making sure that we are aligned.
Our core processes are Design and Market, Pre-Origination, Order, Underwrite, Approve, Audit/Funding, and Set-Up/Service. Core processes are managed using a measurement system derived from our client requirements. Support processes are then subsequently aligned with core processes and managed using quality indicators developed from internal customer requirements. Suppliers are managed by quality indicators and internal process requirements. Partners are organized around these processes and a process owner is assigned accountability for performance against requirements.

Every time we want to better understand and improve a process, we use the Seven-Step Process Management Model (shown in Figure 6). This model is based on Plan, Do, Check, and Act.

![Figure 6. Seven-Step Process Management Model](image)

Our application specialists are essential to the successful management and improvement of our core and support process. Application specialists have extensive training and step in to help teams of individuals use the tools and techniques of TQM effectively to solve problems and to conduct root cause analysis.

Customer focus and teamwork are two of our core values at Merrill Lynch; they're woven through our customer supplier model and our relationships with our suppliers. Suppliers are managed through a measurement system derived from both client segment and MLCC process requirements. MLCC suppliers are categorized as strategic, integrated, or tactical. Information from our clients and our suppliers must be linked to our processes as shown in Figure 7 on the following page. We believe that if we get input from our customers and from our suppliers, and then share that information with both, we know that we're building our processes on the right information. As a check, an analysis of how well our suppliers are meeting our requirements is then performed monthly. Best practices have been developed and replicated for some of our strategic suppliers.
The lessons we've learned in our supplier management process can be broken down into three simple words: Communication, measurement, and standardization. We must communicate with both our internal customers and our suppliers so that they know what we expect of them. Until they know what we expect of them, and what measurements we're going to put in place, they don't have the tools that they need in order to supply us with the information we need to take care of the customers. Standardization is key to this process as well. Once we have put in place best practices for each of our suppliers, we share it with our other suppliers so that they know this is what we expect.

The design of new products and services and how we build them takes into account four major phases of the process: design, development, plan, and implementation. We use cross-functional teams and have measures in place to make sure that we can ensure a trouble-free introduction of new products, programs, and services. We've learned from our design and development processes that we must document successes and lessons learned to make sure that we've accounted for all issues and all barriers to future product and program enhancements. Measurements must be in place to ensure trouble-free introductions. We've also learned about the many resources that are available for benchmarking of the design process.

Processes and measurements must have a clear and identifiable link to the macro level processes, and they must be able to be broken down to the individual process. It is important for everyone in the company to know the measurements for which they're held accountable, how those affect their department measurements, and how their department measurements affect the overall performance of the company.

Human Resources

Elena Otoshavett—Merrill Lynch Credit Corporation's strength is its people. We have a work force that is empowered to develop and utilize its full potential to
Commitment to develop strengths, continued

achieve our business objectives. We have an organizational structure that ensures flexibility, cooperation, rapid learning, and response to current and changing client requirements. We involve all of our partners in our business planning process, so that all partners can see where they fit in. We have a reserve corps of former production partners who are called in to assist during times of peak volume, so that client satisfaction is not diminished. We continually develop our partner's capabilities through our training programs. All of these strengths can be directly attributed to leadership's commitment to continually develop individual and company strength.

Partner performance management program

Each partner's performance objectives are aligned with department and corporate CFOs in our partner performance management program. This program is an annual process to improve the development and performance of all partners. In January, all partners complete performance and developmental objectives for the year. These objectives are weighted, and measurement standards are identified. Each objective is linked to a departmental or corporate CFO. In June, the partner and the leader conduct a mid-cycle review to determine performance to plan. Accomplishments and developmental opportunities are identified, and a performance rating is given. In November, the partner and leader meet, and the process is repeated. They discuss to what degree objectives were accomplished, how they were accomplished, and what MLCC values were used in accomplishing those objectives. The performance rating given determines the partner's merit and incentive pay. Focus groups evaluate this program annually to identify improvements to be incorporated into the process.

Company-wide cooperation

MLCC is committed to alternative work arrangements and skill sharing across work groups. We have many formal activities where cooperation is provided between business units. One example is our team of application specialists who are placed throughout the firm in different business units. We also have a team of business analysts, who have expertise in our business and our information systems. Both of these groups meet regularly to share best practices. Additional collaboration can be seen in our business planning process, where each department identifies its impact on a CFO of another department.

Company-wide communication is facilitated by the business planning process, cross-functional teams, conferences and meetings. Technology is widely used to promote instant and informal cross-functional communication through the use of e-mail and an on-line bulletin board.

Partner recognition

We have a number of awards to recognize and reward partners. All are part of the Power of Suggestion program begun in 1994 to formally recognize and reward outstanding achievements and improvements. This program is administered by a cross-functional team of partners who review the suggestions and nominations for validity and feasibility.
Training programs and development

We use the triple F strategy in delivering training. Triple F stands for foundational, functional, and focused. This strategy was implemented as a result of a needs analysis.

Foundational training, such as new partner orientation, is information that new partners must have within their first few days on the job. It helps integrate partners into our culture. Functional training is more job-specific training; its length is determined by the amount of client contact, as well as the level of detail required in the job. An example of this is our seven-week regional lending officer training. Focused training addresses the specific needs of partners for new knowledge, skills or abilities to continuously improve their performance and develop their careers.

We always look for ways to work better, faster, and smarter. Training assessment includes an annual survey of all partners, and a mid-cycle survey for alignment. It also includes feedback from our partner satisfaction survey, as well as ongoing course evaluations. Training design is aligned with our CFO’s and includes feedback from assessments. Ways in which we reinforce knowledge and skills on the job include renewal sessions and follow-up evaluations, report cards, service observations, mentor programs, and integrating knowledge and skills learned into the new requirements of the job.

Partner well-being and satisfaction

MLCC works very hard to support partner well-being and to create a healthy work environment. We have a very generous benefits program. A highlight of this is our Employee Assistance Program, providing professional counseling services for employees and their family members. Family services provided to our partners include: paid maternity leave, paternity leave, and family leave. Up to five weeks of paid adoption leave is available to full-time employees for primary care of the child. Additional unpaid family leave is available with the birth, adoption, or foster care of a child, or to care for a seriously ill child, parent, or spouse. And we have a very generous illness leave policy, dependent upon length of service.

MLCC offers a generous education assistance program including tuition assistance up to 100%, scholarships for children of partners, and low interest loans. We offer a generous savings and investment plan, retirement plan, and stock ownership plan.

We strive to create a healthy and safe workplace with a comfortable and ergonomically correct work environment for all partners. We provide support for our visually and hearing-impaired partners with specialized computer and telephone equipment.

We have many methods to obtain partner feedback. One of the most important is the annual Partner Satisfaction Survey that has been conducted since 1992. Feedback is incorporated into our business planning process, and results drive individual and departmental CFO’s. There is also a bi-annual parent company
Feedback methods, continued

Merrill Lynch Credit Corporation, Malcolm Baldrige National Quality Award Winner, 1997

survey, a special event survey, and individual department and partner surveys. The Partner Performance Management Program also provides partners an opportunity to share their opinions of their job and work environment.

Conclusion

Merrill Lynch has been named one of the top 30 family-friendly companies in the U.S. by BusinessWeek. It was named one of the best companies for working mothers, two years in a row, by Working Mother Magazine. And most recently Fortune magazine named Merrill Lynch one of the 100 best companies to work for in the United States.

Business Results

Patti Smith—Business results flow from business processes. This brief overview of MLC’s results will describe where we get our data, how our measurements work, and how we use this information to support our Plan, Do, Check, and Act continuous improvement cycle.

Understanding the measurement process

Evaluating MLC’s business results begins with an understanding of the measurement process. The process is like peeling an onion. The key operational measures, or end measures, are like the outer layers of the onion. There are 14 key indicators that tell us about the health and well-being of our company. Peel back the onion and we expose another layer, the in-process measures that support the key operational indicators. The key operational indicators are supported by every core and support process within the firm. Figure 8 illustrates the measurement process at MLC.

<table>
<thead>
<tr>
<th>Key Operational Indicators (KOIs)</th>
<th>Critical Few Objectives (CFOs)</th>
<th>Monthly Management Information - Core and Support Process #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Client Satisfaction</td>
<td>1.0 Client Satisfaction</td>
<td>1 2 3 4 5 6 7 8</td>
</tr>
<tr>
<td>Partner Satisfaction</td>
<td>2.0 Partner Satisfaction</td>
<td></td>
</tr>
<tr>
<td>Financial Performance (ROE, Net Income, etc.)</td>
<td>3.0 Orig./ Volume</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.0 Efficiency/ Effectiveness/ Profitability</td>
<td></td>
</tr>
</tbody>
</table>

Figure 8. Measurement Process

The CFOs allow us at to focus our collective efforts on those areas that either require improvement or that are particularly critical to our strategic direction. The CFOs may completely overlap operational indicators, or they may just be a subset.
The CFOs are supported by in-process measures on activities performed in each core process. These measures are reviewed every month in our managers’ reports.

Our measurement system adds value by enabling us to diagnose, evaluate, and attack out-of-target performance. The linkage of individual process measures to corporate-wide CFOs allows for efficient root cause analysis. Our system allows our managers to display their performance for all of the supporting activities for a CFO. By using this measurement system, we can focus our efforts on only those areas that require improvement. For example, you can see in Figure 9 that client satisfaction is CFO 1.0 and the second quarter is experiencing an unfavorable trend. By looking deeper into the core and support process level, you can see that we should focus our efforts on process number 3, which is the one that’s out of target.

Figure 9. The Linkage of Individual Process Measures

Example: Client satisfaction tracking

Performance is doing something; it’s an activity. How do we identify which activities are the ones most crucial for supporting a CFO? We start with the business planning process. As part of the process partners, from all disciplines evaluate and identify both the activities and the relevant measures that they feel are prudent and necessary to support completion of the CFO.

For example, a key measure for us is client satisfaction, which becomes much more relevant as we receive more information. As shown in Figure 10 on the following page, increasing our origination survey response rate is a support activity to client satisfaction. You can see that we experienced a dip in 1996, which we examined to determine the root cause. We decided the problem centered on the
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Example: Client satisfaction tracking, continued

Figure 10. Selected Measures

<table>
<thead>
<tr>
<th>Client Satisfaction</th>
<th>Origination Survey Response Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Good &amp; Excellent</td>
<td></td>
</tr>
<tr>
<td>1Q 1994</td>
<td>90%</td>
</tr>
<tr>
<td>2Q 1995</td>
<td>85%</td>
</tr>
<tr>
<td>3Q 1996</td>
<td>80%</td>
</tr>
<tr>
<td>4Q 1997</td>
<td>75%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan-July</td>
<td>60% 70% 80% 90% 100%</td>
</tr>
<tr>
<td>Aug</td>
<td>70% 80% 90% 100%</td>
</tr>
</tbody>
</table>

Key Activity = Increase Survey Response Rate
CFO = Increase Client Satisfaction

Origination survey responses. In 1997 we devised improvements to more quickly receive our responses. We’ve also increased the response rate on our surveys, which has produced direct increases in our client satisfaction measures.

Partner input to identify the most important processes for the completion of a CFO is critical. Linking in-process measures to CFOs is facilitated by monthly reviews. Partners are not only key to identifying activities, but they’re also key to assessing the results of those activities.

Indicator owners, the subject matter experts, are held responsible for maintaining, supporting, and analyzing indicators. They are closest to the activity being performed and its measurement. This is the “center of the onion” with the explanations for individual indicator movement being prepared and explained by the indicator owners. Group managers then provide a roll-up of individual measures by function or process. Finally, the onion is put back together by the CFO champions, who pull together core and support process activities that support one particular CFO.

The critical factor in both the activities and the measures is the recognition of interdependence: whether it’s process, partners, or results. It’s all about linkage.

Examples of measurement process

Here are a few further examples of how we use our measurement system for root cause analysis to improve results. Figure 11 on the following page shows our company’s specific results for turnaround time; you can see the unfavorable movement in the first quarter of 1996. We responded with a quality improvement and control story, or QIC story, a standardized process for root cause analysis. There were two improvements deployed as a result of this process: better alignment of partners’ activities and improvements in vendor and supplier management. After the deployment, the trends show an improvement.
Examples of measurement process, continued

Here's another example. A key operational indicator, overall partner satisfaction, is impacted by many measures that require understanding before out-of-target performance can really be root-cause diagnosed. Turnover is a direct link to satisfaction. It shows who's leaving and why partners are satisfied or not. It's also a barometer for other measures like training and overtime.

In Jacksonville, Florida, the unemployment rate has consistently run below the national average, at 3 to 3.5% most recently. Selected benchmarking to local competitors would tell us that we're better off than the competition. Although we won the award with over 20% turnover, that number in itself is unacceptable to us. Our measurement system provides us with a standardized process to probe more deeply.

We found that our efforts needed to be pinpointed on compensation, empowerment, and communication. We are now seeing benefits from this improvement process.

Like everything in a continuous improvement system, our measurement system is vested with many strengths and many challenges. We have many measures over all areas of our business. The challenge is to identify those that are most relevant and most critical to the business.

Our measurement system shows that we have positive trends with favorable performance relative to industry standards and industry averages; but that system is also challenged in obtaining consistent, comparative competitive data, sometimes because of confidentiality and sometimes because our competitors tend to be rolled up within another firm. We also have difficulty in rolling up measures that have different underlying metrics, so we are trying to continuously improve these areas.

We are very fortunate, however, to be guided by a standardized review and improvement process that is fact-based. We're very aware of the strength that interdependence and linkage give us, and the challenge of bringing them to life.
Introduction

Quest for Excellence

Robert J. Smith—Charles Darwin once said, “It’s not the strongest of the species that survives, nor the most intelligent. Rather it’s the one that’s most adaptable to change.” Nature changes somewhat slowly; business changes very rapidly. MLCC was founded in 1981 and operated about nine years with one product and one distribution channel. Change began in 1990 when we were still a one-product company. We found ourselves having to leverage into multiple products and multiple distribution channels to really serve our clients’ needs. Change accompanied our growth. Between 1990 and 1993 we grew from 150 partners to 300. And with that, we wanted to make sure we had the appropriate controls and processes in place to manage that change. We embraced quality, not because of a crisis of survival but as a way of helping us manage this growth. We’ve accomplished this through engaging our partners in the change process. As Michael Johnston said earlier, “Change is debilitating when done to us, but exhilarating when done by us.”

Lessons learned

Over the last five years, we’ve implemented a number of continuous improvements that have fundamentally changed the way we run our business. There are two major lessons that we learned. First we learned that we had to transform the culture. And secondly, we instituted a business growth planning process that provides the framework within which we can grow and link all the company’s activities back to individual partners.

Cultural changes

You’ve heard us refer to employees as partners; this is the cornerstone of our culture. We are a partnership bound by values and principles that were developed by Merrill Lynch & Co., Inc. We are bound by the covenant of values we established with our partners in 1992 when we began our cultural change. They provided a framework centered on our quality and commitment to satisfying the needs of our clients.

Alignment philosophy

In defining the culture, we noticed that we had to change from a transaction-oriented philosophy to a customer-oriented philosophy. As a result, we’ve changed some terminology. Before 1993, we had files, thick files sitting all over our desks. Now we have clients. Before we had managers, individuals who were responsible for managing functional areas. Today, we have leaders, people trying to get the best out of all of our partners. Before, we originated loans. If a client wanted a traditional 30-year fixed rate mortgage, we’d provide that even though another mortgage product or innovation may have better served their needs. Today, we satisfy client needs. Before we had functions, today we have processes.

Seven leadership activities

Our leadership model is the framework in which we develop our partners into leaders. Our leaders are the catalyst for managing the change and the growth that
Seven leadership activities, continued

we've experience in our business. The leadership system we've created is simple; we refer to it as the seven leadership activities. We wanted to keep it simple so that everyone could understand it and apply it. We are now in the process of developing a new leadership model that reflects many of the changes that we've since made. We expect all of our partners to be leaders, whether they're in the mailroom or in the boardroom, and in some way demonstrate these leadership activities.

Business growth planning process

Through our continuous improvement efforts, we realized that our partners were an under-utilized source of feedback. In order to involve them in the process, we implemented the second largest lesson learned, the business growth planning process. Planning now takes place from the boardroom to the mailroom. Business planning continues to be important to ensure that our growth is reasonably in control, and that we have the appropriate measures and processes in place. We expect all partners to be engaged in the business, to know and understand our shared mission and vision. Partners are to help us in developing our key strategies, tactics, and activities that support our annual business plan. Our partners understand how their work fits into the organizational objectives, and the way all are linked—vision, mission, business plan—to their desk. By engaging our partners, it helps us to make sure that our processes are appropriate, measured, and that people are held accountable.

A new vision and mission statement

Our business begins and ends with our mission and our vision. When we transformed the business growth planning process in 1995, our parent company had just transformed their vision statement. We then also created a new vision statement written by over 25% of our partners. The vision is: “To be the preeminent provider of planning-based, liability management solutions.”

Our mission was very similarly retooled and reengineered. It serves our three basic constituencies: Financial Consultants and clients; our shareholder, Merrill Lynch & Co.; and our partners. We will—

• Provide Financial Consultants and clients with superior service, products and knowledge.
• Maximize shareholder value and investor return while building the Merrill Lynch client base.
• Provide a dynamic work environment that fosters growth, participation and recognition.

Growth-driven organization structure

We made tremendous progress in transforming our organization. But it did not really reflect the breakthrough performance that we had hoped for. We noticed in late 1995 and 1996 that we needed to reorganize our company to better meet the needs of our stakeholders, including our clients. So, we created core process groups—the cultural transformation that we proposed in 1993. When we really made the change from functions to processes, we created core groups beginning with
development and marketing of products and services. We continued with sales and production, then funding, and finally after-sales servicing of our credit products.

Our support processes are comprised of systems and technology, business services, finance, accounting, and underwriting, as well as legal and compliance. Each group is comprised of our various subprocesses, with process owners who manage the day-to-day operation of the group. They form an internal client-supplier type of relationship.

Summary

The Malcolm Baldrige and the Florida Sterling Awards have profoundly shaped, guided, and challenged us to become the organization we are today. It's a never-ending quest for quality. Ron Strauss, COO of Merrill Lynch International said, "Being world-class is not a fixed state. It's a mentality of growing constantly, getting better and better at what you do, and realizing that you're never finished. And by being invigorated, inexhaustible, by knowing there's always more to learn. This journey never ends."

Author information

Michael A. Johnston is Chairman and CEO of Merrill Lynch Credit Corporation where he is responsible for the development, profitable implementation, continued operations and long-term strategies for MLCC. He began his career at Merrill Lynch in 1969 and has held various finance and accounting positions during his years of service. He earned his degree in Finance from Pace University.

Emilie Christenson is Vice President of Business Planning for Merrill Lynch Credit Corporation, a position that facilitates the annual business planning process. Emilie joined Merrill Lynch in 1990 as a participant in the Private Client Development department. She received her B.A. in Finance from Manhattan College.

Hal Minot is a Senior Vice President of Marketing and Business Development where he is responsible for all product/program development, marketing, training, and sales support. He joined MLCC in 1981 and introduced the home equity credit line, Equity Access, and a first mortgage market product, the PrimeFirst Mortgage. Hal earned a B.A. degree from Harvard University and an M.B.A. from Columbia University.

Thomas Mackin is an Assistant Vice President, Training Manager at Merrill Lynch Credit Corporation. He joined Merrill Lynch in 1981 and is now in the Partner Development Center where he is responsible for identifying new training opportunities and conducting training classes. Tom earned a B.A. degree in Journalism from Temple University.

Robert Mickler is an Assistant Vice President, Sales Training Manager in the Sales Operations department. He began his career at Merrill Lynch Credit Corporation in 1991, eventually assuming management of functional training and evaluation for the Mortgage and Credit Services Group. Robert received his B.B.A. degree from Villanova University.
Elena Otohavett is Vice President, Partner Development Center where she is responsible for organizational development, including human resources support services, training and development, and partner satisfaction initiatives. Elena earned a B.B.A. degree from Western Connecticut State University and a master’s degree in Social Work from Florida State University.

Patti Smith is Vice President for Financial Performance. In this position she is responsible for financial modeling, analysis, and economic/environmental sensitivity simulations. She received her B.A. degree from Wayne State University.

Robert Smith joined MLCC in 1992 where he directed Funding and Wholesale Lending through 1997. He is now Senior Vice President of Lending Services. In this position he oversees the origination, processing, and closing of loan packages. Robert earned a B.S. in Business Administration from The University of New Hampshire.