



**THE ORGANIZATIONAL CHANGE PROGRAM**  
*For the CGIAR Supported International Agricultural Research Centers*

## **VALUING INTELLECTUAL CAPITAL”**

### **Summary Report**

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## **BACKGROUND**

This report contains the findings of a study commissioned by six major U.S. corporations - EDS, Eli Lilly, Johnson & Johnson, Lockheed Martin, US West and Warner-Lambert, along with the University of Warwick in England and Unilever in the Netherlands. The purpose of the study was to determine how organizations have cultivated, managed and fully utilized their intellectual capital, so as to derive maximum benefit from their knowledge assets. It sought to answer such key questions as:

- How do organizations define the terms “intellectual capital” and “knowledge management?”
- How have organizations developed and maintained corporate cultures that truly value intellectual capital?
- How can you gain senior management commitment for knowledge management initiatives?
- What should be the components of a strategy to manage intellectual capital and organizational knowledge?
- What should be the role of a knowledge management group?
- What part should information technology play in the knowledge management process?
- How do organizations identify and retain those people deemed to be their most valuable intellectual assets?
- How have organizations successfully shared knowledge across functional boundaries, and between various regions and/or various parts of the world?
- How should organizations measure the value of their intellectual capital?
- What are the critical success factors for the effective management of intellectual capital and organizational knowledge?

Full participants in the study included 46 leading-edge organizations in the U.S., Canada, Europe and the Middle East (see final page). The summary report, however, is based on interviews and conversations with over 500 companies around the world during the last nine months.

This is still an emerging field, and the systems and processes associated with intellectual capital and knowledge management are being applied in different ways in different circumstances. The perceptions and experiences of survey participants varied widely. As a result, their opinions frequently differed, and it was not always possible to draw definitive conclusions. Therefore, this report simply attempts to outline the more commonly-held views, to help generate further debate on the subject.

## **INTRODUCTION**

Over the last century, some companies have made history while others have become history. This is because some have been much better at changing than others. Overall, the corporate scorecard regarding change is not very positive. The research data overwhelmingly shows that the issue is neither the corporate strategy nor the change initiative itself. Rather, the problem lies in an organization's inability to overcome its own inherent inertia, its entrenched resistance to change.

This resistance has stiffened due to the phenomenon known as "change fatigue." In the last twenty years, many people have experienced change programs that have failed to deliver the promised improvements. This has spawned the attitude: "Why should we go through more pain for even less gain?" Employees may be forgiven for viewing knowledge management as just another soon-to-be-forgotten change initiative.

Random efforts at knowledge management have been around for some time, but there are trends today that make it more critical to business. New companies are being established and others are going out of business, both at unprecedented rates. Competition is more intense than ever, as organizations fight for smaller shares of saturated markets. Fresh opportunities beckon, but the risk of the unknown counterbalances the potential gain. To be a player in today's global market, an organization must have access to pertinent internal knowledge, as well as up-to-date information on worldwide competitors, customers, joint ventures, trading opportunities and economic developments.

It must also have the wisdom and creativity to use such knowledge. When the competition is this tough, and companies are looking for an edge, they have four main options:

- They can combine intelligence and knowledge with unique insights their competitors cannot envision.
- They can develop innovative products with superlative value their competitors cannot create.
- They can implement creative processes with extraordinary speed and efficiency their competitors cannot match.
- They can nurture high integrity relationships with superior collaboration and loyalty their competitors cannot achieve.

All four of these options call for a new breed of employee. A generation ago, organizations hired people who already knew (or who could quickly learn) what they needed to know to do a good job. What these employees brought to the company had a much longer shelf life. Therefore, learning in its broader sense - trying new things, constantly experimenting, and making errors - tended not to be encouraged. Now, many organizations are embracing the concept that everyone at every level needs to be continually learning and adapting.

To compete in tomorrow's business world, companies will have to do a much better job of engaging the collective minds of their organizations. They are already discovering that "they don't know what they know." Vast deposits of corporate knowledge have little value when they are tucked away in reports, filing cabinets or the minds of individual employees.

Different units are reinventing wheels, duplicating projects, or repeating mistakes. People are always hearing about other divisions that display best-in-company practices which never become a part of the organizational knowledge base. As a result, these practices must be relearned by each division as it starts up a new plant, installs a new machine, or structures a new business team.

Most organizations still only value the knowledge that comes from certain individuals, usually senior managers, and discount the fact that much of their intellectual capital resides in the average employee. This extensive pool of capital is particularly important because it constitutes the prime source for innovation and strategic renewal. Creativity is a critical asset, whether it comes from brainstorming in a research lab, daydreaming at the office, throwing out old files, designing new processes, improving personal skills or developing new sales leads. Whereas financial capital may be scarce, intellectual capital is potentially limitless. The more it is accessed, the more it grows.

How are people around the world buying in to this alternative perspective of corporate capital? It varies, of course. Many are legitimately suspicious of this view becoming the next fad. The cynicism is unmistakable. Management consulting firms were gearing up for reengineering some time ago; now, they are gearing up for knowledge management. However, in most of the companies featured in this study, senior management has realized that the world economy is rapidly coming to rest on a foundation of intellect. All of these companies, each at their own rate, are in transition towards a state where intellectual assets are becoming their principal capital goods, from which products and services are produced. When the implications of this transition are fully understood, the pressure on every company to place the highest value on its intellectual assets will finally become inescapable.

## **MAJOR FINDINGS**

### **Defining Intellectual Capital**

Intellectual capital encompasses both the inventory of knowledge-based assets as well as the capacity to acquire and assimilate new learning rapidly. It is often invisible, intangible, or difficult to detect and quantify. In fact, many companies view intellectual capital as a spectrum, ranging from ideas, thoughts, the “stuff” in people’s heads (implicit knowledge) to “concrete” intellectual assets, like software code, with true measurable value that can be tracked and managed. By this definition, it includes the organization’s intellectual property - its legally protectable and exploitable intangible assets.

However, intellectual capital is much more than just intellectual property. At its roots, it is based in the “know-how” of people. It encompasses the intellectual and learned abilities of the workforce - its skills, knowledge, abilities and behaviors. It is a compilation of the individual, group and corporate knowledge brought to the table in solving complex business problems. It consists of information, experience, wisdom and ideas that are linked to the organization’s mission or principal purpose, and which will ultimately add value to the consumer of that organization’s output.

Intellectual capital represents the resources that produce imagination, inventiveness, and competitiveness, through the generation and dissemination of thoughts, ideas and fresh approaches. It is the sum and synergy of knowledge, experience, relationships, processes, discoveries, innovations, market presence, and community influence.

Most survey participants distinguished between three different types of intellectual capital:

- The first, *human capital*, is composed of the skill, talent, knowledge, and expertise of the employee base. It can be described as a company's collective capability to extract the best solutions for customers from the knowledge base of its individuals. Human capital resides in the people who walk in and out the front door every day.
- The second type, *structural capital*, can be thought of as the firm's organizational capabilities to meet market requirements. It is the knowledge that has been captured and institutionalized within the structure, processes and culture of an organization. It includes patents, copyrights, proprietary software, trademarks, trade secrets and general organizational know-how. It can be stored in the form of documented procedures, databases, expert systems, decision-support software and knowledge management systems. Structural capital is everything left at the office when the employees go home, and can clearly be regarded as company property. This is the reason it is important to capture human knowledge as structural capital. Unlike human capital, structural capital can be owned and thereby traded.
- Finally, *customer capital* refers to the organization's network of satisfied clients, and their loyalty to the company. The value of an organization's intellectual capital should be measured in terms of the quantity and quality of the client relationships that have been built up over time. It is the clients' confidence in the products and services provided that has value. Customer capital would have been a truly alien notion to bookkeepers just a few decades ago. Yet it has always been there, hidden within the entry for "goodwill."

Intellectual capital implies more than just pure intellect. It also entails a degree of intellectual action. In this sense, intellectual capital is not a static, intangible asset per se, but an ideological process - a means to an end. While critically important, the collective knowledge, skills and behaviors of the organization can only really be deemed a "capital" asset if they support the strategic direction of the organization; if the skills possessed by employees can actually be applied to the pursuit of profit.

Intellectual capital, therefore, has the unique quality of being able to add value to itself, to create wealth. As Marx phrased it: "Capital brings forth living offspring or, at least, lays golden eggs." Hence, intellectual capital is composed of the understandings, insights, and technologies that result in innovations, new developments, and the increased wealth of the organization. It is the knowledge at the disposal of a company that can be converted into a tangible asset of specific commercial value. This often manifests itself as the difference between the "book value" and the "market value" of the company.

Traditional balance sheets leave out much valuable information. Even though intellectual capital is the precursor for the growth of financial capital, it does not fit within conventional accounting models. In particular, valuing intellectual capital means supporting certain business activities, such as building customer loyalty or employee competence, that may not impact the bottom line of a company for years. And it places less emphasis on near-term success that may not position the company for the future.

Therefore, the phrase “intellectual capital” is often introduced to show that asset value must not only take into account short-term financial measures, but also resources that are difficult to express in monetary terms. In this context, intellectual capital is often promoted as being the competitive advantage one organization has over another, all other factors (finance, material, technology) being equal. It brings tangible value to the notion of people and what they can contribute to the ongoing viability and success of an organization, if supported by culture, technology and business process.

Over the last few years, the perception of “capital” itself has changed. No longer are buildings, furniture, factory capacity and number of bodies the deciding factors in the size, longevity or value of an organization. Bill Gates’ copyrights are worth more than all the hard assets of most companies and, indeed, most nations.

Therefore, it is important that we do not settle too soon on specific definitions of the term “intellectual capital,” but continue to test out various interpretations. The effort towards a crisp definition is part of a tendency to turn issues and concerns into the apparatus of the next management fad. But the topic is too important and too valuable to be trivialized in this way. Each phrase has its own baggage. The deeper reality is rich and varied, and it is really the dynamic interplay of multiple elements that creates the value that companies seek.

## **Defining Knowledge Management**

Knowledge management involves the planning, organizing, directing, and controlling of an organization’s knowledge assets or principal wealth-generating capability. It includes processes for identifying, creating, capturing, conserving, organizing, transforming, transferring, and delivering the compiled “know-what” and “know-how” of the company. It provides the means of getting the right information to the right person at the right time in a user-friendly manner.

More specifically, knowledge management is the capability of the organization to capture and disseminate knowledge beyond the small group that may originally have created that knowledge. It involves a concerted, coordinated and deliberate effort to realize the potential of a situation, by using the collective knowledge that either exists within an organization, or to which the organization has access externally. It also involves networking “knowers,” so that understandings and technologies are developed, refined, shared, challenged, applied, evaluated, reformulated, and marketed to benefit the organization and its customers.

One must make the distinction here between implicit and explicit knowledge. Explicit knowledge is essentially factual, and potentially available to all. Implicit knowledge is contained, and is owned by individuals. The challenge of knowledge management is to make all knowledge explicit and openly available within the organization; that is, to make implicit knowledge explicit. Fundamentally, knowledge management involves thinking of all knowledge as a central resource to be managed for the benefit of the organization as a whole, rather than as being locked away in people's heads.

Many participants in the study defined "knowledge management" in the context of its relationship to intellectual capital. From this perspective, it is the process for building, tracking and deploying the intellectual capital of the firm, the conversion of this intellectual capital into "intelligence" and "learning," and the leveraging of this intelligence and learning for competitive advantage and company value, in order to help the organization achieve its strategic goals.

Essentially, it is the means whereby intellectual capital is protected and extended, leading to value creation and to an increase in financial capital. Of course, all companies do this in some way - though very few do it effectively and even fewer do it by deliberate design. A focused approach to knowledge management creates value more reliably than simply applying raw intellect (no matter how well trained) to a business situation.

Perhaps it is not surprising that knowledge management has become a very popular term, because it seems to fit easily into traditional management thinking. Why not manage knowledge and ideas like we manage inventory? Many senior managers talk about knowledge as if it were some unified "thing," and yet we know that knowledge is dispersed, fragmented, slippery and multi-dimensional. More to the point, we can add value to existing things but we generate new value with knowledge and ideas that matter. There is a very important distinction between adding value and generating value. When people interact, they are more likely to *generate* value.

Many companies have avoided a "pat" definition of such a complex subject. Some have even avoided the term "knowledge management" altogether, with its overtones of "command and control." They favor a focus on knowledge generation, capture and sharing. Companies need to create an environment that both encourages and supports this sharing. After all, knowledge is created in dialogue. It increases via sharing, and decreases if hoarded. Knowledge management is the art and skill of fostering and disseminating the results of this dialogue.

Some think of this process as organic. Intellectual capital and knowledge management are fragile concepts and, as a consequence, they continually need to be nurtured like any living thing. You need to feed the roots - the knowledge base of the company - for sustained cash flow and wealth creation. First, however, management must focus more on the roots and less on the fruit. Anyone can sell the apples once they are picked. The trick in growing a bumper crop is to develop a healthy system at the roots.

## Fostering the Corporate Culture

Within many organizations, the response to cost and competitive pressures has been *structural* in nature, isolated from the cultural shifts needed to generate lasting change. Large companies are spinning off new enterprises in their desire to create smaller, more responsive business units. The bad news is that breaking into smaller units with the same old culture is not going to solve the problem.

Most existing cultures developed during the Industrial Era, when work was divided up into little steps. Companies did not trust workers to “get it right,” so it was natural to have someone supervise the workers. These supervisors needed supervision, so managers stepped in. Managers too needed watching, so executives were given a role. No one was quite certain that their subordinates would follow their assigned task. This model was, in essence, structured distrust.

The first thing to do in converting the model is to seek clarification of the organization’s values and explore the relationship of these values to knowledge. Perform a culture scan to assess cultural attributes, processes, and management systems that are reinforcing learning and knowledge dissemination. Then assess the cost to the organization of not fully utilizing its intellectual capabilities, and of not learning fast enough.

Knowledge-based organizations are more intentional about the learning process, rather than following earlier laissez-faire approaches. These organizations focus not only on individual learning but also on collective memory, and use this memory to anticipate what competitors are going to do next. Learning is accomplished by the organizational system as a whole, almost as if the organization were a single brain. They manage the process of learning, beginning with business strategy and competencies for excellence, through a variety of learning experiences, and concluding with application and adaptation. They view learning as systemic, and integrated into the real work of the organization. They capture information about what they have done well and determine why they were successful, sharing those ideas that will have impact. Management is consistent in providing an environment within which employees feel free to share, and know that their ideas count for something.

Developing intellectual capital and encouraging creative thought is an investment. Lots of opportunities - and pitfalls - are missed by organizations where ideas are not raised, and therefore no one has a chance to consider them. If something looks too good or too obvious, it is likely that an insufficient amount of rigorous thought has been applied to the issue. Most survey participants encourage their people to be in thinking mode most of the time. Yes, innovators may seem like “troublemakers,” but such troublemakers are an organization’s greatest resource in volatile times. Innovators - unconventional, eccentric and undisciplined as they may be - nevertheless remain the most perfectly designed adaptive agents that organic evolution has yet produced. They literally love acquiring new knowledge, they welcome it, they see opportunity in it, and they attempt to expand it.

As a number of companies noted, one of the most damaging events in our evolution was the birth of the world view that change must be painful. This myth has caused massive anxiety - but nothing could be further from the truth.

New knowledge is like adventure; it feels wonderful, exhilarating and life-affirming. Change should be effortless and natural. Insights, revelations, ideas, and discoveries make people feel good. The problem is that most people will not change without a crisis. If there is an attempt to “create” such a crisis, the perpetrators may be accused of crying wolf, and people will not believe them. Wait for a crisis to happen, however, and a company might not survive.

Even for those companies that are receptive, cultural change of this kind - no matter how dramatic - is never really complete. Companies start out by foraging for answers, preferably rapid answers, that will give them a “quick fix,” while what they really need is an environment and a mentality that encourages this foraging on an ongoing basis. What is known is like food on the table; after a while it starts to spoil. There are thousands of outdated practices used every day that, when added up, significantly impact individual and corporate performance.

The consensus amongst survey participants was that the notion of culture may seem “soft and squishy,” but it is no different than anything else in which you want to excel. It takes constant focus, and a considerable investment of time and money. Companies do not develop a knowledge-based culture overnight. Nor is it something that can be dictated. Individuals adapt at different speeds for different reasons. None of the participating organizations believes it is “there.” They suggest starting with something valuable and easily recognizable within the corporation. Pick the low hanging fruit! Build off this success. If the leaps are too big, they will not be sustainable.

## **Gaining Senior Management Commitment**

You often hear senior executives avowing publicly that their most precious asset is their people. And yet, a little later, you may be told that “costs walk around on two legs.” Managing by headcount, the ultimate insult to individualism, has been the easy route to controlling people costs, despite its manifest inadequacies. To develop and sustain a culture that truly values its intellectual capital, senior management must believe that knowledge is the single most critical factor in future business success. This is also the greatest hurdle, because it requires a leap of faith that something comparatively intangible now will be of critical and concrete importance in the future.

After all, it seems that every month a new management technique emerges which CEOs readily devour, in their hunger for new ways to improve the performance of their businesses. Companies are rightsizing, downsizing, and reengineering. They are striving to be “learning organizations,” and are promoting team building and self-empowerment. The options can appear overwhelming. For some senior executives, it is more comfortable to point to the past and fight to stay with “what got us here.” In many cases, they may have thirty years or more invested in the business. When you have that much experience in doing things one way, it is hard to change, to let go of control. What if change leads to failure? There is a natural reluctance to accept that the world itself has changed and what worked before will not work any more. Since the “new way” is not as clear or as easily understood as the “old way,” many people cling to the old. Most of us would like to hold on to the times when things were simple and answers (at least from where we sit now) seemed within reach.

This type of senior management will always find good financial reasons for not investing in new ideas. In the eyes of executives who crave more certainty in their investment choices, an organization where ideas are rampant may have serious shortcomings. Creativity, exercised in isolation, can lead to warehouses full of unexploited ideas. Entrepreneurship can lead to fragmented efforts. A “can-do” climate can lead to barely controlled chaos. Cries for shareholder value have reinforced this anxiety. The result is that management has become even more timid in embracing the unknown.

This is more than just a fear of change. Some managers are also apprehensive of operating in a knowledge-sharing environment, because they are concerned that sharing power with employees is tantamount to giving it up. A prime hurdle to enhanced knowledge distribution is the existing power structure in any company. As a beneficiary of the structure, no manager wishes this to change adversely, and wants to believe that it cannot change, in spite of cries for “empowerment” and “team consensus.”

Therefore, without senior management enthusiasm and continuing commitment, the effort will atrophy. So get top down support - ideally, from the very top! Do not let this support be delegated to a level in the organization that does not have the requisite “clout.” Ensure overall responsibility for knowledge management is assigned to a respected senior executive, preferably the CEO. It must be closely watched and monitored by someone whose opinions count. There are so many initiatives, changes and revolutions affecting organizations today that people need clarity and direction to separate the “real” initiatives from the “whim of the week” or the “flavor of the month.”

Leaders reinforce their support by constant and consistent communication regarding the value of ideas and knowledge. They must make it part of a clear, simple and consistent vision of the organization’s “future state.” You need the entire executive team to be driving towards this shared vision of the desired culture. They must communicate at all levels, from the big picture to explanations that individuals can relate to directly. They must keep doing it; people are great filterers and will pick up on certain things but not others.

All leaders must model the behaviors that are critical to knowledge generation and sharing. Senior managers need to practice what they preach. There is no substitute for seeing the appropriate behaviors modeled by leaders, every day, five minutes at a time. People will not necessarily behave as they are told to behave if, in their environment, they observe conflicting behaviors - especially in their leaders. If the entire top leadership does not model the way by using the latest techniques for accessing and sharing corporate knowledge, then why should it expect the rest of the company to act any differently?

In modifying an unsupportive corporate culture, begin by assessing the belief systems of the senior leaders, most critically the CEO. Senior managers are not easily “sold” on the concept of intellectual capital. In many instances, it is not so much knowledge ignorance but knowledge arrogance. For example, many North American managers believe that if they want to learn something about the competition, they will get the information when they need it. Conversely, the Japanese believe that they should know as much about the competition as possible right now, so that they will not need to learn it later.

To overcome such obstacles, those responsible for knowledge management must seek to cultivate alliances. A successful knowledge management initiative comes from partnering and working together towards a common goal. If some senior managers feel left out in the cold and uninvolved, they are likely to undermine any new concept. If they are force-fed a new idea, their tendency to resist goes up significantly. Identify executives who are natural allies and who can act as “multipliers” in spreading the word throughout the company. Internal partnerships really open doors for success.

Even if senior managers are willing to change, maintaining ongoing commitment to knowledge development is a problem, especially when every day is filled with conflicting claims on an executive’s time. If a company is really in trouble, executives will focus on the top two or three priorities; typically, organizational knowledge is not one of them. Remind senior managers that sustained business success ultimately comes from effectively applying creative thinking in the business world. Current success may be no more than momentum from a successful past. Tie knowledge management initiatives to rewards, be they tangible or intangible. There has to be something in it for senior managers, a carrot at the end of the stick that the CEO can use to entice them, and which they will strive for. People do not want to waste time on things which are not rewarded in real life.

## **Sharing Knowledge**

It is becoming apparent to many companies, particularly in North America, that they do not have all the knowledge and skills they need to compete in the global marketplace. Many participants in the study have been *international* companies for a long time. To be a *global* company, however, implies exchanging information and resources on a world-wide scale. It has become imperative that organizations share knowledge internally on how to survive in the global economy. It used to be: “Are you in a ‘need-to-know’ position?” Now it is: “Everybody needs to know.”

It is surprising how many processes are reinvented by organizations. Many, of course, need deliberate reinvention and customization from time to time. However, others are being designed because earlier work is lost, inaccessible, or available but not accessed for various reasons. Many companies still operate on the assumption that employees automatically share their knowledge. However, as these companies expand to operate globally, the assumed opportunities for spontaneous face-to-face exchanges of implicit knowledge diminish. In a strongly devolved structure, this loss is much greater. Enormous invisible costs are incurred by the inability of employees to learn from others in the organization.

Even so, engaging the whole organization is clearly not easy. Technology has just made it easier. Not only does groupware give access to everyone; it also can be used to “level the playing field,” by keeping inputs anonymous. In this way, all ideas are equally valued, and are not considered political “chips” whose value is based on who contributed them. Creating a learning organization through knowledge-sharing networks has become the new “Holy Grail” for organizations.

However, although technology is useful for sending and accessing documents and materials, knowledge travels best when it travels with people. Organizations need conversations that quickly connect the right people at the right level of detail and the right level of abstraction, with the knowledge management system serving as a smart telephone book or a smart network, an “intelligent switch” in a closely-linked global network of expertise and experience. When the right people are connected, the system should encourage and facilitate conversations that provide a more focused, granular, higher value-added perspective. That is how real expertise gets tapped and how real knowledge gets leveraged.

In the study, there were a couple of commonly-cited barriers in facilitating these interactions. One problem is that employees hold on to good ideas as a means of job security. Many people parlay their best ideas into new jobs with customers or vendors, or use them as a means of starting their own businesses, rather than sharing the ideas internally. The other problem is that individual contributors already know what they know, and tend to see only the effort involved in shaping their knowledge in a form that is useful to others.

People will only take a proactive interest in sharing knowledge if they feel there is something in the process that is immediately and personally beneficial. Most employees are focused on their day to day work issues. They are often reluctant to become involved in serving the greater good. This is unfortunate, as the whole can only be the sum of individual contributions. The challenge is to ensure individuals stay focused on the benefits of the bigger long-term picture, rather than being distracted by what may seem like a short-term inconvenience.

However, there is usually no mandate that an individual *must* share their knowledge for the greater good. It is virtually impossible to forcibly extract the knowledge accumulated and resident in each person’s mind. All you can do is create an environment where sharing becomes the norm. Therefore, you have to depend upon the cooperation and personality of employees, combined with the realization that if they fail to share their knowledge, thoughts and opinions with their colleagues, then they cannot expect to receive help in their time of need. Mutual assistance is both the source and the strength of most knowledge generation processes.

If it becomes necessary, there is a harder-line approach that has worked well in some companies. Imagine two competitors seeking to develop a similar product. In company A, knowledge sharing is the norm. In company B, people hold their knowledge cards very close to their chests. All else being equal, company A will probably get to market sooner. But there is a more serious issue here. Those knowledge-hoarders at company B who are slowing down the product development process are like industrial saboteurs. Those whose only mission in life is to control the actions of others, by controlling the flow of information from or to them, are dangerous. In effect, they are actually working for company A. Once senior management has that perspective, it is amazing just how much sharing starts to take place!

## Measuring Intellectual Capital

It is generally thought that humans utilize a very small portion of their brains. It may be less than 10 per cent. It is also thought that if this is the case, the difference between a genius and an average person may be only a few percentage points. If a company can learn how to more effectively tap into its collective intellectual capital and improve its corporate IQ, even in small amounts, the measurable benefits would be tremendous.

If you hope to assess employees based on their intellectual value, then you had better be able to measure their worth and assign some value to it. Setting a value on intellectual assets and tracking progress in real financial terms make intellectual asset management something that is a tangible business activity, rather than merely a nice sentiment about stimulating the creativity of employees. If people are truly the asset that most businesses claim, they should be measuring the economic benefits that come from directly leveraging that asset. Ultimately, success should be measured in business terms. It will take intellectual capital to stay in the game; therefore, using the measurements of the game makes sense.

It might turn out that this is too difficult, if not impossible, to do. First, measure the costs and benefits of undertaking such a project. Would anybody really care about the results? Intellectual or service outputs generated are assumed to be ephemeral and are generally not considered in analyzing a company's resources. Wealth and economic prosperity have been typically measured in physical and tangible terms, like dollars or real estate. Companies focus on traditional measures, such as inventions, proposals, patents, and trade secrets. Their impact to the company's financial performance is both obvious and quantifiable. However, these are after-the-fact measures, and do not measure the causal or process variables.

There is a major thrust everywhere to develop metrics around performance improvement at all levels within the organization. The challenge is the lack of methods or tools to analyze intellectual capital stocks and organizational learning flows. Even historic measures of performance, similar to corporate measures of financial performance, are not likely to be adequate as our knowledge-based economy changes at an ever-accelerating rate. The further you get from the *real* work of creating a product, the further you get from an answer to the question: "Did knowledge help in performance?"

Most companies are not adept at measuring system processes. The simple act of breaking the system down into components undermines the measurement activity. Knowledge management, viewed as a complex "system," does not lend itself to this kind of analysis. Furthermore, one cannot simply look at a list of measures used by another company or business and adopt them wholesale, unless the entire management system, philosophy, and support mechanisms are also adopted. Few functional systems can be easily transplanted from one organism to another without rejection or chaos. Even if you could adopt such measures, attributing the application of intellectual capital as the prime reason for business success is difficult. Ideas by themselves can do nothing but inform action. After that, a host of interpersonal, team and other skills and circumstances may come into play to make things happen.

The most difficult factor to measure is the “movement” between the three components of intellectual capital. Of course, the elements themselves are important to gauge, but it is also recognized that the movement between the elements must be measured in order to manage this resource. Structural and human capital can add value to customer capital. Customer capital adds value to financial capital. In addition, value can flow in both directions between human capital and structural capital.

Because of all these complexities, most companies are not trying to measure knowledge itself. Rather, they are asking whether the conditions exist in the company to develop and share knowledge. For example, is information (“institutional memory”) available to those who can use it to advantage? How are people encouraged to think “out of the box?” Does the company value new ideas, risk-taking and diversity of opinions? If so, how is it evidenced in the processes and structures of the organization and in the behaviors of individuals? What resources are people given to play with new ideas and experiment? How often are new ideas generated in-house? How often are all those ideas implemented? What is the ratio of their success? What feedback are people given on their efforts? Are mistakes seen as learning experiences? Can you “fail-forward?” Does the intrinsic and extrinsic reward system support and encourage the right behaviors?

At a minimum, the executive team should be sitting back periodically and asking: “What did we do to bring in more intellectual capital and keep it? Who did we hire that brought it in? Who did we develop to increase their capability to contribute intellectual capital? Who did we lose? Who could walk out with such capital and leave us vulnerable?”

Testimonials speak louder than isolated numbers. It may be better to talk to strategic players in the organization, and have real conversations with them on who is valued, than to measure precise outcomes. Look at the staffing requests senior people make for whom they want on their various teams. In any organization, these signals are like a blinding beacon on a dark night. The organization cannot help but see them.

Measuring intellectual capital will always be challenging. The word “measure” has so many connotations, both positive and negative, and it seems that nobody is quite sure which is negative and which is positive. All metrics, no matter how enlightened in conception, are subject to abuse in execution. For example, universities may still resort to the number of publications and the number of times a publication is cited by others to measure the value of their faculty. To say the least, these are somewhat indirect measures of intellectual capital.

There is a new level of intensity in getting the right forward-looking metrics in place, rather than just surveying reams and reams of data which are backward looking. It is hard to drive into the future looking through the rear-view mirror. Still, if you chase after too many measures you will burn yourself out, and in the process you will burn out any appetite for building and sustaining intellectual capital in the organization. It will just be another passing phase. On the other hand, if you have too few measures, or a lack of sophistication about what you are dealing with, then you will come up with simple measures that are naive and not at all related.

Common sense supports the notion that a company with people that are skilled, have healthy lives, positive attitudes, and high education levels, is better off than one without. Committed, happy and well-informed employees are going to be more productive than uncommitted, unhappy and ignorant employees. It is obvious that if you have a place where people come to work and have fun and find meaning and feel as if they are making a difference, that is a place where profits will be made.

After the fact, we can connect any result to any cause. All projects that are successful can be connected to quality intellectual capital and effective knowledge management. This is the core element of fad building. We must stop creatively connecting our biases to an outcome, and use our creativity for new and fresh ways to do work. All performance measures, including those for intellectual capital, can be overcooked, and the important thing is to look at the whole system. Cultural change is best fed and watered, and then left to happen. Once you can see it happening, then pursue it with performance measures, standards and the like. Not before, or you risk it not happening at all.

## **Recommendations**

The survey participants made a number of recommendations on how best to foster intellectual capital and manage organizational knowledge. Some of the key recommendations, grouped within six subject areas, are as follows:

### 1. Formulating the Overall Strategy

- Identify the barriers: People who are afraid and uncertain hang on to their power prerogatives with all their might. You have to overcome these “vested interests.” Knowledge is power, and people will resist losing their power bases. You should pay particular attention to those middle managers guarding their patch. They represent your greatest risk as they feel they have the most to lose. The people at the top tend to focus on broad objectives. The people at the bottom are saying: “It’s about time!”
- Gain strength and support from the CEO and the executive team: They should inspire a respect for knowledge as a way to create and sustain change. The message needs to get out that knowledge increases productivity and efficiency; it maximizes the investment in employees. Start with true believers. Begin with senior managers who are really interested in the new initiatives and who will help make them successful. Use these people as leverage to influence those who are less inclined to change. They must be unwavering in their belief that supporting knowledge management initiatives is the right way to go, as there may not be a lot of tangible positive results to observe, at least at first.
- Understand the changes involved: As Charles Darwin put it: “It’s not the strongest species that survive, nor the most intelligent, but the ones most responsive to change.” By nature, human beings are not inclined to change. The familiar feels safe and the unfamiliar provokes resistance. In order to turn this natural resistance *against* change to a lever *for* change, it is

time to get serious about the people side - to elevate the people issues from a secondary role beneath process and technology to one of equal importance.

- Think long *and* short term: Reflect on all the grandiose culture change projects that your company has started and never finished. Avoid another “black hole” of this kind. Learning to value intellectual assets requires a transformation process. In turn, every transformation process involves a long list of things that need to be done to achieve the desired changes. One of the best ways forward is for leaders to select carefully two kinds of initiatives for immediate action - those that will demonstrate most clearly, and on a large scale, how things are going to be different in the “new” organization that values its intellectual assets, and those that will deliver “early wins” and so help convert the cynics.
- Start small: Do not issue long white papers or publish lots of articles about the importance of knowledge management, but begin showing concrete results so that people are inspired to participate in it. Make usable, valuable, customer-friendly functionality available in forms that people can see, taste, smell, use and find to be of value. Allow for a phased implementation of the knowledge management system, so that people can gain experience with the new tools. It is important to get up the learning curve with a minimum of risk, and so it is better to have several iterations through small projects at the beginning, rather than go through a full development cycle all at once. Do not try to be too clever. Just do simple things very well.
- Communicate the strategy: The sharing and leveraging of knowledge as a key component to competitive advantage and profitability must be part of the mission and values of the organization. This acts as a unifying factor. As this message is cascaded down the organization, it sets the foundation for a more rigorous approach to managing knowledge. The question is whether you *consciously* want to aim for certain characteristics of a knowledge-based organization, or stumble along, “accidentally” sharing. Competitive advantage comes from a communicated strategy.

## 2. Creating a Knowledge Management Group

- Construct a strong business case: An organization that has “packaged off” 1,000 employees, each with a quarter century of experience, has theoretically forfeited 25,000 years of institutional memory. While it is extremely difficult to place specific value on something as intangible as knowledge, there is no good reason for *not* managing intellectual assets in light of the potential value that can be lost.
- Consider the alternatives: At best, individuals will rely on the informal grapevine to access knowledge they do not personally have; at worst, they will never operate beyond the boundary of their personal knowledge. The only enduring competitive strength of an organization will be the ability of its employees to learn and to share these learnings. It is the difference between an “organization” and a collection of individual contributors.
- Provide specific resources: To get the benefits of knowledge transfer, you must invest in it like any other venture that will transform an organization. You cannot have a successful knowledge transfer effort without that proactive entrepreneurial support from the top. Traditional Human Resource functions are not set up to serve in that role. Knowledge management can get lost in a litany of unrelated activities surrounding compensation, benefits and retirement planning. It requires a dedicated focus.

- **Appoint a Chief Knowledge Officer:** You cannot just depend on line management to make the system work. Put a “can-do” person in charge. Knowledge management systems are like exercise; sometimes somebody has to prod you and remind you to keep at it, or you lose the benefit. You need a champion with the power to design the knowledge architecture, to set up the processes and disciplines for control, to harness the resources needed to establish and maintain the system, and to promote its benefits throughout the organization. Just as companies have dedicated and trained information technology professionals responsible for planning, managing and leveraging the technology assets, they require a parallel group on the knowledge management side.
- **Limit the group’s role:** Its primary function is to direct those activities best controlled from a central point, and to support the management of those activities best handled from decentralized locations. Too often, knowledge management groups impose themselves on an organization and attempt to dictate what the learning processes should be. One must respect the role of the business units in managing their own knowledge. A knowledge management group must be supportive rather than top-down. It should provide services that avoid reinventing the wheel and should ensure integration of various knowledge management systems, rather than make business unit leaders dependent on systems that achieve uniformity at the expense of limiting flexibility.
- **Keep the group compact:** What you need is a small group of people doing real work that their colleagues genuinely value. Avoid adding staff. Instead, involve experienced line personnel as much as possible. Rotating line managers in and out of the knowledge management group can go a long way toward ensuring that the group remains close to business needs. Value this line experience. You cannot just take a “green” person right out of school, put them through a day-long orientation program, and expect them to become an effective “knowledge consultant.” They simply do not have the credibility.
- **Demand a high degree of professionalism:** In some cases, knowledge management is seen as a dispensable supplement to the main concerns of the company. In this situation, high-quality people are less likely to be attracted into the knowledge management group; the quality of the group’s output will be affected; the perception of the value of the group will diminish; good people will not want to go into the group; and so on. The aim should be to operate this spiral in reverse!
- **Involve more employees:** As the former Chairman of Scandinavian Airlines, Jan Carlzon, said: “An individual without information cannot take responsibility; an individual who is given information cannot help but take responsibility.” Knowledge transfer cannot be the burden of just one department. Corporate success depends upon “a company of leaders” - people at all levels who embody the skills needed to lead the corporation to success. The job of the knowledge management group is to build a shared vision and develop the skills of those natural leaders, wherever they may be found. One participant felt that his corporation had the world’s largest knowledge management group; it includes all the people in the company! For those who see this as a cute comment, view it instead as your most profound challenge.

- Eliminate the group as soon as possible: Knowledge management should be an *integrated* part of the business rather than an *applied* part. Advocate the adoption of a “knowledge management mindset” throughout the organization, rather than continuing to invest a specific group with this function. Companies will be truly successful in knowledge management when it is everyone’s job, and not something that someone has to continually manage in a specialized way. Consider the safety analogy. Ten years ago, there was a safety manager on every corner of every block in the manufacturing industry. Guess what? They are not there any more because safety is part of everyone’s job. The whole concept of safety has essentially moved from a cadre of people who watched over the corporation to a couple of consultants who continuously advocate and keep the processes running. That is the model.

### 3. Developing a Knowledge Management System

- Identify the most *critical* knowledge: You could get crushed under the weight of all the know-how in most companies. You need to concentrate on, and be clear about, what is really important. Each and every day we are bombarded with hundreds, if not thousands, of bits of information. Often this information contains conflicting messages. True priorities are frequently lost and efforts wasted. Information is coming in far more quickly, and you require processes that help you go after what you really need and absorb it. The Internet can be a gold mine for some people but a junk yard for others. Thousands of Web sites have not been updated for lengthy periods of time. You cannot afford to waste time sifting through rubble just to get at the nuggets.
- Eliminate redundant information: All the material in your system needs to have a “sell by” date. Knowledge atrophies. Its half-life is often relatively short. Populating the system with knowledge that is outdated is counter-productive and potentially dangerous. Anything that gets put into a knowledge management system will get treated as true and gospel, especially by junior people in the organization. They will use it. What you take out of the system on a regular basis is every bit, if not more, important than what you put in.
- Do not devalue old knowledge: Some companies may be *too* innovative. If the culture is strongly infused with leaders that value innovation and the creation of new intellectual capital, they may chase the new concepts without effectively supporting the legacy ideas that built the business, and without maximizing the intellectual capital that already exists. Knowledge from new sources has greatest value when it is combined with knowledge from established sources. Individuals do not operate in a vacuum; they do not create their ideas out of nothing. All knowledge has a pedigree, an intellectual lineage that goes back far beyond the person or persons who “created” it.
- Approach knowledge management as a management issue: Companies spend a good deal of money looking for technology solutions to knowledge management. However, in many cases, most information that is “surfing into,” or gets sent our way indiscriminately, does not have the impact or surrounding context to make us think differently. Information technology has not yet had the chance, or the maturity, to significantly alter existing cultures and the way people learn.

After not getting the results anticipated, many survey participants have realized that implementing knowledge management means fundamentally changing the way you do business - from vision and values through measurements and incentives. Failure to address all elements can lead to a fruitless waste of resources.

- Reduce the number of transmissions of knowledge between individuals: You have all played the children's game of whispering something in the ear of the individual next to you, and have observed how the information changed as it went around the circle and came back to you. Is the modern organization much different from this circle of childhood friends? A real-time knowledge management system should allow individuals to input and access knowledge with the least amount of distortion.
- Be cautious of technology: A sober realism is overtaking our naive fascination with computers. As we understand their limitations, we are beginning to appreciate human capabilities even more. After all, how much of the knowledge needed to run an enterprise can be captured in a firm's automated systems, applications, databases, and manual procedures? The more we can see information technology as a human tool, rather than a human replacement, the better off we will be. We need to keep technology, organization and people in a healthy balance. Technology is critical, but knowledge management is about how people work, share information, and create value. Technology is only the enabler of change, not the driver. It cannot build corporate communities: people do that!

#### 4. Encouraging Organizational Learning

- Apply positive reinforcement: Although you have to make it clear that there is no choice about becoming a knowledge-based learning organization, you have to be careful about "motivating" people with anything that sounds like an implied threat. It is hard to obtain real commitment with a lot of "thou shalt." You need to help people understand that not to learn is to remain stagnant, and ultimately to fall behind peers who continue to learn. Emphasize that learning is like anything else. The more you do it, the better and quicker you get. Assume that everyone has the basic desire to learn. As Aristotle stated in the 4th. Century BC: "All men by nature desire knowledge." People just need to be reminded of what they knew when they were very young - that learning is fun!
- Encourage creative approaches to organizational learning: Learning happens when you keep looking *after* you think you have the answer. Time needs to be taken to examine, question and imagine. Learning is enhanced by interactions of all kinds. Interactions like this can occur anywhere; the structure of the interaction is less important than the quality. For instance, one can be in a three-day strategic planning session and learn very little. On the other hand, a chance encounter and dialogue in the hallway with a colleague can yield immense learning. According to one survey participant, only 25% of significant innovations come from the formal business planning process. 75% come in more opportunistic ways, such as listening to customer suggestions or responding to sudden moves by a competitor.

- Promote team learning: Most individuals could, and would, claim to be learning all the time. However, there is an important difference between *individual* learning and *organizational* learning. Typically, people want to prove how much more clever they are than others. For this competitive attitude we can thank our schools, where students are pitted against one another, vying for the teacher's accolades. Rarely are students taught how to listen and learn from one another. Think of a rowing crew, and what would happen if one person realized that the boat was falling behind and started to row faster. The boat would almost certainly stop, rather than speed up. To move forward, you have to involve all the partners in the boat; similarly, in a company, you have to involve everyone, from the top person to the most junior staff. Even the most talented leaders will not be able to pull on their own.
- Demand intellectual respect: Intellectual assets are more than people, but only people care about whether their ideas are valued. Even in the best circumstances, we tend to be better at tearing down each other's ideas than building them up. Moreover, learning is often impeded because we are afraid that if we give away our good ideas, someone else may get credit for them. How a person is treated on a daily basis by their work group is key. If someone has other options, they will not want to work with people they do not respect and who do not respect them. People will stop producing creative ideas for your organization if they are not appreciated. It is not that they will not have any valuable ideas; it is just that they will stop sharing them with you!
- Make the link between learning and communication: Learners do not just talk about things they already know but also talk in order to make sense of new ideas for themselves. This is not "idle" conversation; it is "inventive" conversation. Openly address problems, looking for ways to prevent them from happening again instead of focusing on who is to blame. Spend time in every meeting, project and event asking: "How could we have done it better?" and "Who could benefit from our learnings?" To understand complex issues, such as current business environments and strategies, it is critical to take time to dialogue and reflect on the issues in order to develop the depth and consistency in thinking required to implement these strategies effectively. Complexity *is* complex; there are no short cuts.
- Cultivate a broad perspective: Skills and knowledge are all very well, but you need to incorporate the feelings that people bring to the job. It is not just a question of learning a skill; you also have to be in the right frame of mind and have the right attitude to use it effectively. The true goal is to create an attitude that respects learning events (programs, seminars, classes), but has more regard for learning moments (pauses to reflect on what we have learned as we squeeze ideas through experience). Allow people to dream. As Albert Einstein asserted: "Imagination is more important than knowledge."
- Develop a sense of urgency: In the past, people could learn at their leisure. If they did not want to be part of major change, they could move on to other roles. Nowadays, learning - and the sharing of knowledge learned - is faster and more dramatic than it was before. It is revolutionary rather than evolutionary, as we discard the old ways and shift quickly to the new. The waves of change are coming much more frequently, many businesses are shrinking, and far more jobs are at stake. It is hard to shed people, but none of us has a *right* to a job any more, if we ever did. People (and organizations) may be left behind if they are unable to make the shift.

## 5. Engaging the Workforce

- Hire the right people: Look for team players; those that are known to express strong convictions, yet who find it easy to support others as well. Do they really listen? Do they let other people score? A knowledge management strategy relies on people who can accommodate new ways of working and new ways of thinking. This can often be a difficult and painful exercise, because the natural tendency in individuals is to try and stabilize their beliefs and perceptions. Look particularly for those able to hold the present and the future in healthy tension - to be in the present, to be aware of and act in the here and now, while at the same time having one foot in the future and seeing what is possible by being successful in the present.
- Give them the right tools: Much of today's workforce is more mobile than ever before. They need access to know-how from customer sites, or at home, or on the road. In the past, when a new employee came on board, they would ask: "Where is my office?" Today, they want to know what kind of network facilities there are, through which they can dial up and work from home, or from the Bahamas. Within a few years, network connections will truly become invisible and disappear from awareness. People will be free to focus mental energy on tapping information content, not fumbling with the pipes that carry this content.
- Identify those people who are your most valuable knowledge assets: How? Not by volume of activity. Not by whether they write more papers. Not by whether they publish more articles. Make it simple. Ask the people in the company whose expert judgment you respect: "Who's good? Who really knows their stuff?" Not everyone is driven to do things that would show up on standard activity meters, so pay relatively little attention to them. Do not keep track of who contributes the most documents to the system. That is grandstanding. It rapidly becomes a very political metric. Instead, look to judgment and rely on judgment. Typically, top performers are identified through word-of-mouth and the informal communication networks that permeate large organizations. Yes, it is messy and it is sloppy, but that is the way the world works.
- Identify your key innovators: At one participating company, a group of strategic thinkers were asked to determine how many innovative thinkers an organization was likely to have. The number of innovators, they decided, equals roughly the square root of the total staff. Thus, a staff of 400 might support as many as 20 innovators. A staff of 100 would include 10. A start-up with only four should have two. And a real start-up of one had definitely better have one innovator!
- Allow maximum organizational freedom: Intellectual capital must be managed, to be sure, but this is capital that tends to want to manage itself, and the more valuable the "asset," the more likely that is to be true. Apply minimal corporate "glue" of any kind. Only in cases where centralized systems and processes are the only proven effective solution should they be created or implemented. The control-oriented Industrial Era model is bankrupt. Its bureaucratic mentality is like thick molasses. Its underlying assumptions are hopelessly out of date. The Internet is the model, where knowledge-sharing grows organically once the means are in place.

- Align individual values with corporate values: People respond to situations and challenges based on their knowledge, experience, and values. These constitute a person's "reality." They are hard-earned, and are therefore intimately linked to a person's sense of importance and self-worth. While people are unique in their differences and in their abilities to create and disseminate knowledge, they are similar in their need to feel important and good about themselves. If a person can align their personal knowledge, experience, values, and sense of importance with the organization's values, goals and plans, then the person will be far more motivated to contribute to the organization.
- Encourage positive human feelings: In the past, people thought of their company as a machine. That is how they would refer to it: "We're a well-oiled machine." This is mechanistic, reductionistic language. It tells people they are just cogs in that same machine. Instead, identify those universal human qualities that provide positive knowledge-sharing outcomes, such as a capacity for satisfaction in work well done, a sense of humor that increases resilience, an understanding that eliminates interpersonal friction, a humility that precludes ego battles, and a joy in achievement. These qualities are innate and accessible to everyone.
- Encourage "intelligent" risk taking: This is sometimes expressed as "playing to win" as opposed to "playing not to lose." As Samuel Johnson put it: "Nothing will ever be attempted if all possible objections must first be overcome." There are many organizations that profess to allow risk taking, but the majority of them, when the rubber hits the road, act in ways that push their people right back into conventional behavior. Organizations in downsizing modes have particular difficulty with this, since they have likely created environments where safety and risk aversion are key. It is difficult to take a chance and step out of your thinking box, when the next job to be cut might be your own!
- Get everyone involved: You must allow anybody in the organization to contribute to the solution of the latest problem. One recent study found that senior managers were aware of only 4 percent of the problems in a company, while supervisors perceived 74 percent. According to the same study, workers closest to the customer recognized 100 percent. You never know from where the correct or best answer will come. The history of innovation is less a matter of great men and lonely geniuses, and more the result of a tangled pattern of interconnecting events, the accidents of time, circumstance and place that have given rise to opportunities.
- Look for consensus: The goal is to look at varying alternatives and to try as a team to come up with the best answer, focusing on what is the *right* thing to do, not necessarily the most expedient or politically correct. This approach takes time. Empowerment is not some sort of fairy dust; you cannot sprinkle it on people and expect them to suddenly do exactly what is needed. Some with a more traditional leadership style can become highly frustrated with the consensus process, but in the long run it has been proven to work. All stakeholders must be given an opportunity to have their say, with no hidden agendas, and with the one best answer as the goal.

- Avoid focusing too much on opinion leaders: Senior management should be promoting a culture which says that there are no *special* people in the organization. Everyone is special. Every person has an important job to do. Drive decisions and authority to lower levels. Those who champion and develop others in their areas of responsibility should be more highly regarded - and rewarded - than those who create a team reliant on their own skills and decisions. Sooner or later, people who are motivated by “personal turf” are de-valued in a culture that places greater value on collaboration. There is no systematic way to ensure that knowledge from all parts of the company receives appropriate attention, but if everyone undervalued their own knowledge just a little bit, we could probably solve the problem!

## 6. Retaining Key Intellectual Assets

- Value your best people: It is often the case that companies undervalue workforce skills and assume that personnel leaving the company can be easily replaced by the labor market. During times of weakened loyalty and stability, companies need their peoples’ intellectual capital more than ever. Unfortunately, this “brain-drain” aspect of downsizing is little understood by those organizations focused on the size of the workforce, rather than on the quality of the workforce. However, “corporate wisdom” is far more difficult to maintain among more transient, less faithful employees. If you do not recognize people as having the intellectual assets you need, then you are in danger of losing people and not knowing the value of what you lost.
- Foster high-integrity relationships: Successful companies tend to operate through relationships rather than static processes; through “neural networks.” This is how much work gets done - via relationships. These are especially key to retaining intellectual capital. In all major spiritual traditions around the world, values such as responsibility, well-being, truthfulness, caring and inner peace (equanimity) are highly cherished. These values are needed for the type of relationships that build trust, even when cultural practices or belief systems are different.
- Understand what motivates your top performers: Do not assume that the knowledge worker is driven by the same organizational perks that have driven those that came before. Those workers that will create intellectual assets are loyal first and foremost to their professions and their own professional development. These new knowledge workers seek job flexibility, look to make a real difference through their work, and wish to have control over their lives and careers. The idea of the company making these decisions for them is not acceptable. Viewing these requests as whims and unnecessary accommodations is to miss the point. These are not whims. These are fundamental changes in the workplace of the Information Age.
- Recognize that the definition of “top performer” is constantly changing: Do not try merely to retain the historically best performers, but include in the decision-making process an assessment of those with the potential to become the best fit with your future skill requirements. Most organizations are interested in their star performers and seek to retain them. Yet, while specifics are valued, intellectual capital is always changing. What is scarce today may be abundant or redundant tomorrow.

## CONCLUSION

One participant in the study referred to television's longtime Ed Sullivan Show, which often featured acts wherein an individual would balance ten or more dinner plates at the top of long wooden shafts, then run back and forth across the stage keeping the shafts and plates spinning at different rates. All this took place in front of a live audience and millions of television viewers, accompanied by an orchestra furiously playing fast-paced music. Ed Sullivan and his show are no more, but the task of running back and forth, keeping projects spinning, and trying not to let anything drop, is performed daily by companies and their management teams. They have no studio audience, but answer instead to a large group of stakeholders, to whom the crash of a plate or a delayed launch means the loss of millions of dollars.

In an increasingly competitive market, this balancing act has become harder to maintain. There are some companies, highly profitable only a few years ago, that are barely surviving today. There are companies that were not around ten years ago that have leapfrogged the industry leaders. It is becoming easier to duplicate products and services. As competition becomes more intense, every possible advantage must be leveraged to the fullest.

Most companies today know that they need to release the collective creative genius bottled-up in their workforce to remain competitive. For a company to "sell" innovative solutions, it must behave as an innovator. To sell information, it must itself be a prototype of a knowledge company. An organization's human resources are, by and large, a huge untapped source of improved performance. Properly utilized, these resources can give a company a significant advantage over its competitors. People and their capabilities are unique, and thus can provide seemingly unending reservoirs for competitive distinction.

But brain power or human capital is not easily captured. Existing business structures, systems and processes are often quite hostile to new and innovative ideas. Too many new employees, upon making a suggestion for improvement or offering a new business concept, have heard the phrase: "That's not how we do it around here." Companies are filled with rules that unintentionally suppress creativity. Some underground innovation still occurs, and occasionally succeeds, but mostly it is killed off before it has a chance to blossom. It is ironic that organizations seek to hire creative people with proven track records of accomplishment, then stifle them with jobs and organizational structures that prevent the employees from using the talents for which they were hired.

True leaders, however, always champion those that get out in front, where the road is muddy and the path is unclear, and make things happen. Those that stick their necks out and lead us in new directions are always more valuable than those that follow. An organization must understand that what it does today is the best it knows, but there is always a better way to do it - no matter what it is. People must constantly reassess major key components of the organization to look for that better way. Do not throw out the old just to be different. Keep what is good about the old way but be willing to let go of whatever is ineffective. Organizations need to be forever reinventing themselves so as not to become complacent.

Neither arguments nor advocacy can carry this debate alone. Intellectual capital is often not directly related to the product at hand, but is several steps removed, or is viewed through multiple surrogate indicators which disguise its value in the final output. Therefore, there has to be a felt need; people have to come to a consensus conclusion that this issue is important. Otherwise, like any other investment, the hard-nosed bean counters will want results faster than they should expect, or in the wrong places. In these circumstances, people in charge of the knowledge management system will continually be fighting the fires of funding to maintain the status quo, versus pushing the edge of the envelope.

Companies are just beginning to develop the appropriate corporate cultures to support a deeper understanding of intellectual capital. In ten years, many believe that measures of intellectual capital will become the most closely watched numbers in annual reports. Financial statements will take a back seat as supplements. It will be a subtle shift. The concept of intellectual assets gradually permeates an organization with a new way of understanding itself. It moves from a vague-sounding notion, embraced by one or a few, into the consciousness of the whole. Typically, it begins with the proverbial lip-service status and then very slowly moves into the operational thinking of the organization. It took 150 years for society to shift from the Agricultural Era to the Industrial Era. We will have to wait for the final verdict. It may take companies another fifty years to get intellectual capital “just right.”

One last point: You can have the best information technology, the best systems and the most competent staff, and still fail at knowledge management. The heart and soul of knowledge management is the collective capacity of individuals to be highly focused, aware, resilient, collaborative, and creative. If they are provided with an environment where self-esteem, teamwork, trust and respect for one’s person and one’s ideas are the norm, people put their hearts into their work. Mental and physical involvement are not enough. Commitment comes when the heart is involved.

## Survey Participants

3Com	Knowledge Era Enterprises
Aetna	Kuwait Oil
Anglian Water	Mayo Learning International (ICL)
Arthur D. Little	Metropolitan Life
Bell Atlantic	Monitor
Bell Canada	Monsanto
BP Amoco	NatWest Bank
British Aerospace	PNC Bank
Buckman Laboratories	PriceWaterhouse Coopers
Cornell University	Public Works Canada
Crosslee Consulting (BP)	Revenue Canada
Dow Chemical	Rosenbluth
Dublin Group	Rubbermaid
Equifax	Saturn
Ernst & Young	Sierra
Forum	Skandia Insurance
Gemini Consulting	Texaco
Global Creativity	University of Warwick
Group Solutions	University of Western Ontario
IBM	US Bank/Piper Jaffray
Insurance Corporation	US Internal Revenue Service
KLM Royal Dutch Airlines	Wyeth-Ayerst
	Xerox

