THE Ken Blanchard COMPANIES

Perspectives

Emerging Trends and Demographic Forces to Watch for in the Next Decade

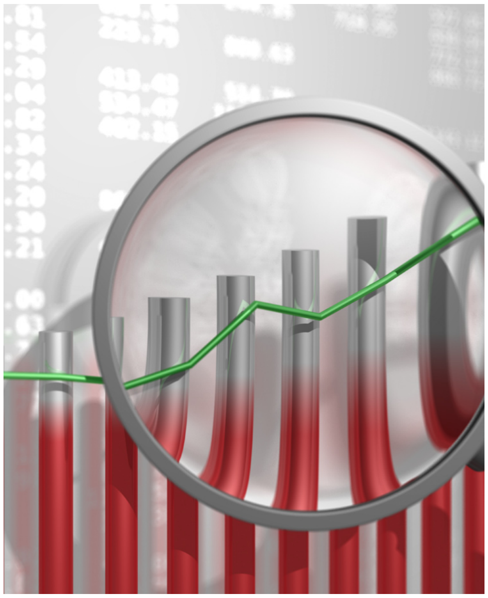
Executive Summary

This report explores emerging trends and demographic forces that will be impacting the workplace and workforce over the next decade. After sifting through hundreds of pages of data, trends, and predictions, we compiled ideas and analyses from expert sources including the Institute for the Future, the American Society for Training & Development, The Futurist, The Herman Group, and others. In addition, we interviewed Blanchard® associates and Blanchard clients on past, current, and future workplace issues, the results of which were incorporated into this report.

OUTSOURCING—Could Your Job Be Next?

In *The Future of Success,* author and former Secretary of Labor Robert Reich writes, "It's never been a better time to be a consumer. But the price to pay for these wonderful times is that it's never been more competitive to be a worker." According to Forrester Research, Inc., over the next decade, 3.3 million white-collar jobs and $236 billion in wages will shift from the United States to countries with lower labor costs. As companies seek ways to survive in an intense competitive environment, many are using outsourcing as a competitive advantage to reduce labor costs and increase profitability. It also presents many challenges for organizations managing a global and virtual workforce.

Offshore outsourcing of American blue-collar manufacturing jobs, such as making shoes, electronics, and toys, to cheaper labor markets is a fact of life. In the last decade more and more service-oriented functions such as data processing (credit card and cost centers) and back-office administration (medical transcription, transactional insurance) are moving offshore to Japan, India, Brazil, China, Russia, Singapore, and elsewhere. That trend is spreading to higher-paid, higher-skilled white-collar jobs. Tech jobs, which in the past were considered intrinsic to Silicon Valley and tech hubs Japan, India, Brazil, China, Russia, Singapore, and elsewhere. That trend is spreading to higher-paid, higher-skilled white-collar jobs. Tech jobs, which in the past were considered intrinsic to Silicon Valley and tech hubs such as



The Office of the Future is a think tank for new ideas, and it functions primarily as the R&D arm of The Ken Blanchard Companies®. Created in 1997 by Marjorie Blanchard, PhD, in response to a need to plan proactively for the future of the company, this office challenges the company's status quo and acts as a catalyst for change that will ensure the continued vitality and success of the company.

Information

This document is a summary of workplace and workforce research compiled by Lily Guthrie, The Ken Blanchard Companies, Office of the Future. It is available in PDF format. For further information, contact Lily Guthrie at 800 728-6000 or email her at lily.guthrie@kenblanchard.com.

Seattle and Boston, are next on the list of casualties. According to Forrester Research, companies such as Boeing, Dell, and Motorola will spend 28 percent of their information technology budgets on overseas work in the next two years. Intel's long-term plan is to invest in the fastest-growing markets—India, Russia, and China. Intel employs 400 full-time Russian software research engineers and nearly 200 Russians in marketing and sales, wireless Internet access, and modem projects. Microsoft® is investing $400 million into software development jobs at its India Development Center in Hyderabad and an additional $750 billion on R&D and outsourcing in China. Knowledge work can now be done almost anywhere in the world.

India is becoming an international outsourcing powerhouse. In India's major cities, a variety of new jobs are being created from reservation agents booking flights for Delta Airlines to accountants preparing tax returns for Ernst & Young to software engineers developing new products for Oracle. Infosys Technologies Ltd., with main offices in Bangalore, employs 250 engineers to develop IT applications for Bank of America. The financial industry is also undergoing big changes. Some U.S. brokerages, including Lehman Brothers and Bear Stearns, are hiring Indian financial analysts at one-half the usual cost. Other companies, including SmartAnalyst, Inc. and OfficeTiger, employ Indian financial analysts to provide equity analysis, industry reports, and summaries of financial disclosures at one-third to one-half the usual cost. Wipro Spectramind Ltd., a large outsourcing firm located in New Delhi, employs over 2,500 college-educated professionals at a fraction of what it costs in the United States. They are processing claims for a major U.S. insurance company and providing help desk support for a big American Internet service provider.

Why should businesses care?

According to outsourcing experts, the huge job migration has just begun. Research Director Frances Kramouzis of Gartner, Inc. says, "The trend is just starting to crystallize now because every chief information officer's top agenda item is to cut the budget." Many experts argue that this short-term solution may cause devastating effects in the long term. "What happens if all those displaced white-collar workers can't find better jobs or jobs that pay the same as they were making? Are we losing our middle class? Our manufacturing workers and the low-level, middle-level, white-collar workers who are the biggest consumers of products and services? Who is going to buy all of the goods and services produced by American companies when so many people are finding that their jobs are so precarious?" asks former U.S. Labor Secretary Robert Reich.

U.S. economists predict that overseas outsourcing will have little effect on the U.S. workforce and may even play an important role in supplying the needed skilled labor in the next decade. As the baby boom generation, which constitutes 60 percent of the prime-age workforce, starts to retire in large numbers, outsourcing abroad will provide a viable solution to close the labor supply-demand gap. Many outsourcing experts predict that moving jobs abroad will barely make a dent in the looming manpower shortage. In addition, moving jobs overseas will level the playing field in developing nations as workers remain in their homeland, thus raising their standard of living and improving the economy in their local communities. Workers in developing countries can be paid less but still enjoy a comfortable lifestyle in their country. On the other hand, American organizations can improve their profitability by using cheaper, skilled workers.

Many organizations will keep jobs in the United States due to security and practical reasons, such as crucial R&D and the bulk of back-office operations and jobs that require face-to-face contact with customers. In some cases, jobs may return to the United States as more employers and other countries recognize the cost-benefit of using workers who have training experience and the desired work ethic; even if they are more expensive, they are also more productive. Currently, many jobs that went to Mexico have returned. Global organizations, Honda, Volkswagen, BMW, and others are relocating their manufacturing plants to the United States where they are closer to the consumer.

Why should Blanchard® care?

Outsourcing presents many challenges for organizations managing a virtual global workforce. There are challenges working with people within the United States who are only two time zones away. Trying to work with someone on the East Coast when you are on the West Coast can be a huge challenge. If the person is also from a different culture, has different life experiences, does not speak English as his or her primary language, and is 11 time zones away, the challenges are monumental. How will individuals work collaboratively within that team? How will managers effectively manage these teams globally and virtually?

Nokia is an example of a multinational organization managing global virtual teams. With its main headquarters in Finland, Nokia operates out of 20 locations around the world with five research centers linked virtually to California, Singapore, Hungary, China, and the United Kingdom. Virtual teams run projects around the clock. What works for them is their flexibility in training, such as using the Ninth House® process combined with virtual sessions and face-to-face training. Blanchard® delivers the entire training program directly through third parties and licensees located worldwide.

Blanchard's biggest challenge is to build an infrastructure that supports multinational clients of this magnitude. To be a global training company that operates seamlessly across markets is a business imperative because if we don't do it right, we will lose and we will lose big. A Blanchard consulting partner pointed out that, "Currently, Blanchard is a North American organization. The cost of travel is so great and the number of hours involved for people to travel abroad is even bigger. We call ourselves a global company, but we are really a domestic company that has a few niche markets around the globe. We currently have a client who wants its programs taught in 20 different countries and the training to be outsourced—it's going offshore for lower labor prices and will expect the training costs to be lower as well."

As outsourcing overseas becomes more common in the coming decade, creating cultural diversity and managing that diversity will present opportunities and challenges for the workforce and in the workplace. Organizations are searching for a global leadership language. How can they expand the cultures, space, and time in order to get a virtual team working toward peak performance? It will require tremendous amounts of global understanding.

Cost Savings

- A computer programmer in India earns $6,000 per year, compared to $60,000 for an American with a comparable degree and experience.
- An aerospace engineer with a master's in math or aeronautics in Russia earns $650 a month, the United States counterpart makes $6,000 a month.
- A chip designer with a master's and five years' experience in the United States makes $7,000 a month, while offshore the salary is $1,000 a month.
- A financial analyst brings in a salary of $7,000 a month in the United States and only $1,000 a month in India.

Company	Number of Workers and Country	Type of Work Moving
Accenture	5,000 in Philippines by 2004	Accounting, software, back-office work
Conseco	1,700 in India, 3 more centers planned	Insurance claim processing
Delta Airlines	6,000 contract workers in India and the Philippines	Airline reservations, customer service
Fluor	700 in the Philippines	Architectural blueprints
General Electric	20,000 in India by year end; big R&D center in China	Finance, IT support, R&D for medical, lighting, aircraft
HSBC	4,000 in China and India	Credit card, loan processing
Intel	3,000 in India by 2005	Chip design, tech support
Microsoft®	500 in India and China by year end	Software design, IT Support
Oracle	Doubling staff in India to 4,000	Software design, customer support, accounting
Philips	700 engineers in China	Consumer electronics R&D
Procter & Gamble	650 in Philippines, 150 in China	Tech support, accounting

Data: Gartner, Inc.; McKinsey & Co.; Forrester Research, Inc.; *BusinessWeek*

Number of U.S. jobs moving offshore (to low-wage countries such as India, China, Mexico, and the Philippines)

Job	2005	2010	2015
Life Sciences	3,700	14,000	37,000
Legal	14,000	35,000	75,000
Art, Design	6,000	14,000	30,000
Management	37,000	118,000	288,000
Business Operations	61,000	162,000	348,000
Computer	109,000	277,000	473,000
Architecture	32,000	83,000	184,,000
Sales	29,000	97,000	227,000
Office Support	295,000	791,000	1,700,000

Data: Gartner, Inc.; McKinsey & Co.; Forrester Research, Inc.; *BusinessWeek*

Outsourcing Hot Spots

Canada
- Growth areas: Software development, customer service
- GDP per capita: $29,400 (81% of U.S.)
- Literacy: 97%
- Telecom infrastructure: Excellent
- Edge: By doing software R&D here, you profit from the favorable exchange rate and government tax credits.

Ireland
- Growth areas: Software development, customer service
- GDP per capita: $28,500
- Literacy: 98%
- Telecom infrastructure: Excellent
- Edge: Michael Dell thinks Ireland's the best way into Europe, and he may be right: it boasts an educated, tech-savvy populace whose work habits are more flexible than those of their neighbors in the European Union.

China
- Growth areas: Software development, contract manufacturing
- GDP per capita: $4,600
- Literacy: 82%
- Telecom infrastructure: Better in coastal cities
- Edge: Wages are low. Caveat emptor: Weak intellectual property laws can lead to major contract headaches.

Argentina
- Growth area: Customer service
- GDP per capita: $10,200
- Literacy: 96%
- Telecom infrastructure: Excellent
- Edge: International calls cost 3 cents a minute and, due to a ravaged peso, Argentina's educated workers make less than that.

Ghana
- Growth area: Data entry
- GDP per capita: $1,980
- Literacy: 65%
- Telecom infrastructure: Poor
- Edge: Shoddy landlines mean outsourcers must use satellite links; low wages and high quality make up for the added telecom expense.

Romania
- Growth area: Software development
- GDP per capita: $6,800
- Literacy: 97%
- Telecom infrastructure: Poor
- Edge: Three dozen universities here teach computer science, producing a surfeit of highly trained programmers.

India
- Growth areas: Software development, customer service
- GDP per capita: $2,540
- Literacy: 52%
- Telecom infrastructure: Mediocre
- Edge: India's programming talent has lured 85 percent of all software outsourcing. But wages are on the rise.

Philippines
- Growth areas: Customer service, data entry
- GDP per capita: $4,000
- Literacy: 95%
- Telecom infrastructure: Good
- Edge: American-accented English and a 12-hour time difference make this country perfect to handle the overnight phone shift.

Data: Thomas, Owen. "The Outsourcing Solution." *Business 2.0*. September 2003.

DOING MORE WITH LESS—Or Is It for Less?

Have you seen the latest IBM TV commercial? The boss is lying down in his psychiatrist's office describing a recurring nightmare in which customers wearing black outfits and black and white facemasks are chasing him. The doctor asks why they are chasing him. He replies, "Because they want everything now! What does this mean, doctor?" And the doctor turns to him and says, "Because customers want everything now, *on demand*, and you're not responsive enough." That ad sums up how people are feeling when the subject of workplace stress comes up. Everything has to be done yesterday. "We've always been working at a rapid pace with our clients, but now they want more. They want more, faster, quicker; and they get frustrated when it takes as long as it does—and quicker does not necessarily mean better," replies a Blanchard consulting partner. Everyone appears to be functioning on overdrive, but was it any different five years ago when the economy was booming?

Today, we are living in uncertain times—the economy is not rebounding as anticipated, there are fears of imminent terrorist attacks, and the war on Iraq seems prolonged. For organizations the competition is increasing dramatically, the pace of change is faster, and profitability is tougher to achieve. Top management is struggling to find strategic ways to reduce costs and still be the best in the business. They are forced to kick up their game a notch—be more competitive, do it faster and cheaper, and do it more efficiently than ever before.

Doing more with less means doing more from a performance perspective with fewer resources to do it. Increasing competition is behind cost-cutting measures. In a recent survey conducted by the Blanchard Marketing department, 160 top leaders were asked to rate their number one business challenge. Seventy percent identified competitive pressure as their number one business challenge. No area has felt the pressure more than the travel industry. Hilton Hotels Corporation recently reported that second-quarter earnings dropped 29 percent as the conflict in Iraq, pressure to lower the average daily room rates, and higher health care and workers' compensation costs squeezed their profit margins. The pressure for top management is on how to offset the rising costs of doing business. They can't do it by raising prices anymore—especially with deflation. They can't pass the costs on anymore. So they are driving for more efficiency and cost cutting.

The impact of doing more for less is pressuring the front line as well. Mergers and acquisitions, downsizing, and layoffs have left workers doing twice the amount of work for the same or less pay. Many survivors are left wondering if they would have been better off being one of the dearly departed. As one Blanchard sales consultant noted about every major account she has worked with, her key contact person has either moved to another position, left the company, or been redeployed, now she's working with different people. "Musical chairs is unbelievable now that they are held accountable. You are at risk if you are only working with two or three key clients because they could change jobs or leave the company any time." A senior learning officer of a very large consulting company succinctly put it, "I hit every one of my performance targets and accomplished all that I set out to this year, yet my compensation was cut by 15%. My boss told me to be happy—that it was not a knock on my ability, it's just the way the world is today." Many workers are asking what they are going to do next. Stay there? Move on? Move up? Work two jobs? They are worried where they will end up.

The training environment is no exception. Another Blanchard consulting partner said, "I'm seeing clients much more cost conscious. But not necessarily more cost conscious as having less money to spend. They are asking how they are going to be able to sustain learning and get maximum benefit from the dollars they spend knowing that the dollars are fewer." To cut back on costs, many organizations are moving their training delivery in-house. A third consulting partner commented that during the first six months of this year she had done more Training for Trainers sessions than the sum total during the last two years. Of course, leaders of organizations that are farsighted can see the value of developing their people for the future and understand that training is an investment and not a cost. But top of mind today is how to get the biggest bang for the buck—how to provide the training that is needed to develop workers quickly, see immediate results from the training, and show a return on investment so that investors aren't pushing them to answer why they are spending money.

Why should businesses care?

Keeping up with the pace of constant and rapid change is a test for management. To stay afloat, organizations are continuously renewing and reengineering themselves. CEOs are grappling to find quick solutions to manage change, and many don't know what levers to push anymore. A Blanchard consulting partner shared, "What people don't have are good approaches in how to lead and manage change during organizational change—they really 'trial and error' it. They often don't do anything, and so they have a group of disgruntled employees who are thinking about leaving or are upset about the change that's going on. It's a very reactionary position for the clients." They are looking for a proven approach to manage change—a process they can use over and over again regardless of the type of change. One Blanchard sales consultant confided that a particular organization is losing market share and market penetration because its key leaders don't want to change. The task of facing change is daunting—how do you do it and where do you start? It's easy to go back to what worked in the past, but that no longer works in the new economy. A business consultant commented, "Strategic planning has a much shorter horizon. It's difficult to go more than 18 to 24 months out. Strategic planning has become an active process that you keep doing and never stops. It's continuous and the time frame is much shorter."

"Clients are being forced to be in a position of reacting, and it is difficult to be thoughtful and proactive," says one Blanchard consulting partner. "I'm going to do training right now for a client. They were sent the materials a week ago and today they are opening the prework package for the training tomorrow. They are freaking out." The urgency of last-minute changes and a reluctance to do long-term planning have put tremendous pressure on many people who have come to expect and depend on the luxury of planning ahead. Clients' expectations are higher. Many clients are demanding more contact than they did a year ago, and they expect Blanchard consulting partners to be more savvy about their industry and specific needs than ever before.

Why should Blanchard care?

Doing more with less also translates to time management. It means getting the same impact on the training in half the time and with less cost. "When you have a face-to-face training intervention and are trying to create behavioral change in eight hours, that can be difficult. Now you are asked to do it in 90 minutes and you never see the participants' faces," says one consulting partner. As more and more time constraints reduce their available time, people find slicing 90 minutes out of a day for training three or four times over a four-month period much easier than carving out a half day or a full day. Numerous consulting partners said that they are seeing a strong push for shorter, interactive sessions. Participants are willing to attend three or four successive sessions that are a half a day in length rather than keep off the job for more than one or two days. A sales consultant said, "I have clients who have specifically said the only way they would do the training is if we could take our material and break it into smaller pieces that people can attend, take apiece, apply it to the job, then build on what they learned. And, oh by the way, design more follow-up work to tie and build onto the initial training."

The trend of doing more with less is not going to go away; it's here to stay. However, people know that if they continue at the same pace, they are going to burn out—at least with using the same approach they are using right now. Advanced technology, like voice mail, email, and text messaging, is supposed to help make lives easier—but people now have to keep up with the technology. How can Blanchard help leaders embrace change by helping them become proactive rather than reactionary?

As Charlie Brown says while lying in bed with his dog Snoopy, "Sometimes I lie awake at night and I ask, 'Where have I gone wrong?'... Then a voice says to me, 'This is going to take more than one night.'"

From the Cartoon "Peanuts" by Charles Schultz

SHRINKING OR EXPANDING— or Just Wait and See?

Since the recession began in early 2001, 3.2 million jobs have disappeared from the private sector. In July 2003 an additional 44,000 jobs were lost, making it the sixth straight month of losses. "This has been the worst recovery we've had in terms of employment since the 1950s," says Scott Schuh an economist at the Federal Reserve Bank of Boston. One reason for the slow recovery rate is that America's GDP growth has increased at an annual pace of only 2.6 percent since the recession ended, compared with an average growth rate of 4.7 percent over the first two years of previous post-1945 recoveries.

The national unemployment rate is the highest it has been in nine years, at 6.4 percent in June 2003; many economists think unemployment could hit 6.6 percent before starting to decline, which probably won't occur until the end of 2003. In addition, workers are remaining unemployed longer than in previous recessions, says Van Horn of Connecticut's Center for Survey Research and Analysis. The U.S. economy lost 394,000 jobs from January to June 2003 and more than 3.2 million workers have been displaced or downsized in the past two and a half years, with the tech sector hit the hardest, according to the Labor Department.

In a move to reduce labor costs, a number of firms are outsourcing entire divisions to developing countries such as China and India. Economist Rob Scott of the Economic Policy Institute estimates that 3 million jobs, mostly in manufacturing, have been moved abroad since 1994. Hardest hit are paper manufacturers, metal benders, and electronics and electrical equipment makers. Over the next five years, U.S. banks, insurers, and other financial service firms plan to outsource abroad more than 500,000 jobs, according to consulting firm A.T. Kearney. The transfers will include financial analysis, research, and accounting positions. Tech researcher Gartner forecasts that one out of 10 tech jobs could move overseas by the end of 2004. It is expected that service sector jobs will generate almost all of the U.S. job growth in the near future, but many service jobs are low paying.

Productivity growth increased in the second quarter of 2003. By hiring more temporary and part-time workers, firms increased their flexibility and productivity, but many firms are reluctant to hire new permanent staff until they are confident about the recovery. Firms are using more part-time and temporary workers as well as asking full-time staff to work longer hours. Many organizations are increasing efficiency via just-in-time inventory systems, that keep only enough product on hand to fill immediate orders, in order to manage human resources.

U.S. employers in 2003 are handing out the smallest pay raises since the mid-1970s (below 4 percent). Companies surveyed in two studies said they have budgeted raises averaging 3.3 percent to 3.5 percent in 2003 and 2004. The belt tightening reflects rising worker health care and pension costs and a weak economy, which has made it difficult for companies to raise prices for their products and services, according to a survey by Mercer Human Resources Consulting. "People are flogging their workers to get more out of them as a means to increase profits, coupled with the fact that there's more supply than demand for labor today," says Steven Gross, a compensation consultant for Mercer. About 12 percent of the companies surveyed in the Mercer study are imposing a pay freeze for at least some of their workers this year, down from 16 percent in last year's survey.

The new economy

Opinions differ as to whether organizations are expanding, retrenching, or staying in a holding pattern. With the conflict in Iraq and two years of Wall Street woes, the majority of organizations are in a wait-and-see mode. Executives are more careful, delaying decisions and hoarding resources. Many are taking a position of safety and going back to basics—balancing their budget, cutting expenses, and not taking any new risks. Weaker industries such as telecommunications and dot-coms are not surviving while healthier organizations are expanding through acquisitions and mergers. Biotech firms and some firms in the financial industry are growing. Pharmaceuticals, which are trying to build their pipelines while not knowing what's going to survive clinical trials or be approved by the FDA, have been in a growth mode over the last three to five years.

Executives are pressured to grow revenue, but many are having a hard time creating true growth in the top-line figure. They are growing cautiously and growing the bottom line aggressively. For example, Sprint swung a profit for the second quarter, yet its net operating revenue fell 3.6 percent. Some organizations are growing but at a slower rate than in the past. To cut back on costs, organizations are stretching their resources and operating with a minimum number of employees.

There is no economic slowdown for the construction sector. For example, Kohler Co., a leading maker of bath and kitchenware, reports record sales this year, including all bathtubs and china faucets, says the company's CEO and president Herbert Kohler, Jr.. The home improvement chain Home Depot is adding 40,000 employees. The booming mortgage industry has gained 150,000 jobs because the same low interest rates that have spurred the demand for homes have also supercharged the refinancing of home mortgages.

While large companies are in a slow growth or holding pattern, smaller entrepreneurial firms are flourishing. Small companies are helping keep troubled economies afloat even though they have not received the attention or support from local governments that most big businesses do, according to The Herman Group's *Trend Alert*. The group predicts that "the future economic growth will come from small companies, which are more responsive, agile, and resilient in the new economy. Small businesses are highly mobile and usually can relocate quickly to draw from a new labor pool, serve new customers, and contribute to a new region's tax base." The strongest growth in employment also comes from small business, not major corporations. Entrepreneurial firms form a stable, active local economy, and although they employ few employees, they are the vast majority of businesses everywhere. Almost nine percent of the adult working population—close to ten million Americans—are now in the process of starting their own businesses, according to the *Inc.*/Gallup survey "Americans at Work." According to *Time* magazine, nearly 33 percent of American workers—or 34 million people—are contingency workers, part-timers, consultants, freelancers, and self-employed workers.

Another market that is reaping profits is China. The majority of companies that entered the Chinese market 8 to 10 years ago have showed a profit over the last two years. According to a Blanchard sales consultant, only one company that she's currently working with is breaking even; all the other companies are showing a profit. Compared to other Asian countries, such as Malaysia, China has a sustainable domestic market. Many products sold in China are not exported. When the 1998 financial crisis hit Asia, Thailand and Malaysia were heavily impacted financially because they didn't have a domestic market to sustain them. Currently the Chinese market is growing. Many multinational companies have set up business in China and are expanding into this market. The average growth rate of such companies is seven to eight percent.

In the meantime, managers, though optimistic, remain in a wait-and-see mode. Many are closely monitoring costs. "As long as employment doesn't collapse, the recovery will continue to gain strength. As it does, slowly jobs will be added and they will be the fuel that kicks the economy into a higher gear," said Bill Cheney, chief economist with John Hancock Financial Services.

Economic Statistics Post 9/11

The aftermath of 9/11 (uncertainty and instability) combined with the recession that began prior to that event, took its toll on the U.S. economy and began a new era—the New Economy.

- There was an estimated $83 billion of direct losses (in human life, property damage, emergency response, clean up, health effects, and temporary assistance) and indirect losses (in personal income, business profits, spending reductions, and tax revenues beyond the immediate sites).
- Insurance payments were estimated at $54 billion.
- The Dow dropped to 8,235 by September 21, 2001, and over the next 12 months the Feds cut interest rates 11 times to only 1.25 percent, the lowest rate in 40 years.
- Unemployment rates increased from 3.9 percent to 6.6 percent.
- Between September 2000 and September 2002, U.S. manufacturing firms lost 1.7 million jobs (hotels lost 200,000 jobs and airlines laid off over 100,000 workers).

In 2004 Cheney predicts:

- Continued belt tightening and layoffs
- A slowing of research and development despite some of the economies of scale created by accelerating consolidations
- A further resurgence of the old economy, which will use new economy techniques and plans
- More pressure on CEOs to perform—reasons for dismissals will include failed strategy, lack of team building, poor communication, misunderstanding of the importance of culture, and inability to adjust quickly enough to changing times
- Continued emphasis on science and medical breakthroughs but with less fervor than in the past

Why should businesses care?

Acquisitions take a toll on employee morale. Organizations that have been acquired by another company or are getting a new president or CEO will go through huge cultural changes. People must cope with the insecurity that comes with the risk of losing their jobs. The people who still have jobs will work harder, endure more stress, and work longer hours. Supervisors expect more from their employees. This situation was occurring before the war in Iraq mobilized over 216,000 employees into the military service.

When the economy improves, employers will recruit again; however, many executives worry that they may not have the necessary skilled labor and talent pool when the economy expands. What skill shortages will manifest in the new economy? Will leaders see that their people are their most valuable asset and invest in them today for a better tomorrow?

Why should Blanchard care?

Uncertainty and slowdown creates a scarcity mentality. And training budgets are no exception. One Blanchard client shared that for the first time in her organization, budget limits are being placed on training and developing people. Some organizations are reducing the size of their training departments and are cutting back external budgets; thus they are expecting their internal people to do more training despite having fewer people to do it. Every training dollar is being scrutinized, and HR professionals are being asked to present a solid business case for the expected returns on investment of any planned training initiative. Increasing pressure from shareholders to achieve short-term profits means that there is greater pressure on employees to produce results and on training to show an immediate return on investment. People are doing more with less everyday—more with less people, more with less money, more with less everything. To save on costs, some companies hire independent consultants to deliver the training. Instead of hiring a Blanchard consulting partner to deliver the training, some hire independent consultants to go through the Training for Trainers workshop and to deliver the training in-house at a much lower cost.

RETURN ON INVESTMENT—Getting a Greater Impact from Training

Walt Disney poignantly said 40 years ago, "You can have all of the buildings in the world, but people are needed to make a dream a reality." Investing in human potential through soft-skills training is as important as investing in capital assets such as buildings, plants, and machinery. In a recent Training magazine survey, leaders were asked what was keeping them up at night. They said they needed to go back to basics and focus on shoring up soft skills such as leadership, management, and customer service. Developing leadership bench strength is key to their future success. With shrinking training and development budgets, they find that equipping key people with the competencies and skills for tomorrow is the challenge. Amid pressures to cut costs and improve efficiency, they must justify their training and development budgets.

Return on investment continues to be top of mind for many HR professionals. With continued cost cutting, many people are being held accountable to show demonstrable results on the training and its impact on the organization's overall goals. Many HR people are grappling with the pressure from upper management to tie training initiatives into the return on investment but do not know how to do it. They are looking for solutions.

Clients are searching for a proven process to measure the return on investment in training, e.g., set up a vision and mission, write charters, measure daily development through impact mapping and KPIs, and most of all create an effective and proven performance management system. Managers are asking for an all-encompassing approach in performance management, including recruiting and selection, incentives and rewards, compensation, and communication. A Blanchard sales consultant commented, "The biggest thing clients are asking more is demonstrable results—what are you going to deliver in results, not just what activities are you going to do." In the past, clients were satisfied to learn our methodology and practices, now they are asking for more. Clients want a strategy of sustainability to make sure that the training will live on and make a difference. They want a comprehensive plan that sustains the new learning and behavioral changes when participants return to the office.

Why should Blanchard care?

The training industry is under more pressure to demonstrate results and the impact of the training. A sales consultant said, "In any of the training we get involved in, it has to be integrated with the business or else it just falls off the radar screen and becomes an inner event. It's got to be plugged into the business process—into some strategic thrust in the company." The focus of any effort, whether or not it's outsourced, is that there's a legitimate, persuasive case made for any training intervention. HR is responsible and accountable for providing demonstrable results.

FOUR GENERATIONS—Working Together

In the next decade, many large and small businesses will employ four, sometimes even five generations in the workplace. Workers from each generation bring different backgrounds, educations, and work/life experience to the workplace. Organizations will need to be sensitive to these differences—particularly in communication styles and the meaning of work—in order to help each generation maximize its contribution to the organization while facilitating communication and collaboration among cross-generational teams. As continuous innovation becomes critical to productivity, companies will recognize that a generational mix is essential for optimal diversity.

Coauthors of *Generations*, William Howe and Neil Strauss distinguish the four current living generations. Howe and Strauss tracked five centuries of Anglo-American generations and noticed a cycle of generational archetypes recurring about every 80 years, roughly the length of a human life. They noted that the social climate in which the generation is born (about every 20 years) shapes how that generation will make choices and decisions in life.

For example, defining events such as 9/11 and the war in Iraq shaped the attitudes of the Millennial generation, who are now coming of age and entering the workforce. Howe and Strauss also note such cataclysmic events as crisis or spiritual awakening periods. The last crises occurred with the Great Depression and World War II. The impact of 9/11 ignited a new social mood and marked the beginning of a new generation archetype. If Howe and Strauss' theory is correct, the Millennials (born from 1980 to 2000) will mirror the persona of the GI generation—displaying positive, confident, team-spirited, and civic-minded characteristics.

The Millennials

The Millennials have the potential to significantly shape the workplace over the next decade as they embark on their careers. This huge demographic group rivals the baby boomers in population with over 80 million members. Born from 1977 to 1997, they are technologically savvy, and value diversity and working with teams. According to Teenage Research Unlimited (TRU), Millennials are more comfortable with technologically advanced products and services than any other age group. They have grown up around computers, CDs and VCRs, wireless phones, and remote TVs. The bad news is that their short attention spans, constant need for stimulation or entertainment, and a blurring of the lines between work and leisure time while on the job can create challenges in the workplace. This cohort requires more supervision and structure than previous generations.

The Millennials have grown up in an environment more diverse than previous generations. TRU, a firm that collects marketing data on U.S. teens, found that almost 39 percent of teens attend schools in which many of the other students have different racial or ethnic backgrounds from their own. In addition to their interactions to diverse groups at school, they are also frequently exposed to different people and cultures through the media and news.

The first wave of Millennials hit the workforce in 2000. According to Don Tapscott, author of *Growing Up Digital*, Millennials prize their independence and autonomy. They are characterized by high levels of self-confidence, a distrust of top-down authority and big institutions, and an interest in having their work judged according to the value they add to the organization. Growing up collaborating on homework assignments and working in teams at school make them uniquely inclusive in their approach to life and work, willing to share their ideas and information and to participate in chat rooms around the world.

Generation X

Generation X is made up of 45 million Americans born from 1965 to 1976. A 1996 survey of 18- to 24-year-olds showed that Gen Xers are confident about the future and view themselves as determined, ambitious, and independent. According to a study by the National Federation of Independent Business, more than 1.5 million of the 5 million people who started businesses in 1995 were under age 30 and nearly 800,000 were younger than 25. Because Gen Xers don't believe in lifetime employment, they may prefer free agency over loyal corporatism. They are risk takers and get the job done without complaining.

Bruce Tulgan, author of *Managing Generation X*, identified the following key attributes that Gen Xers bring to the workplace:

- They seek opportunities to become independent value adders, reinventing themselves and their roles in organizations.
- New technologies shaped their way of thinking, learning, and communicating.
- They are independent problem solvers.
- They are always looking for constant feedback to boost their skills and performance.

Gen Xers are looking for responsibility, opportunity, and professional development and advancement. If they don't get these, they are likely to move on.

Baby boomers

Baby boomers are the post-war babies and represent almost 30 percent of the U.S. population. More than 74 million boomers were born in the U.S. from 1946 to 1964, a number that has increased through immigration to approximately 83 million. By 2020, the last of the baby boomers will be well into their seventies. They are considered the healthiest and most educated generation in history. For decades, boomers have crowded the workplace, and currently they represent 46 percent of the working-age population. In 2003 the first wave of boomers turned 57. According to a survey by AARP and Roper Starch Worldwide Inc., about 80 percent of baby boomers say they'll stay in the workforce past age 65. Boomers bring invaluable intangible assets to their jobs, including their expertise, experience, and strong work ethic. In the years ahead, smart employers will do their part to retain these older, experienced workers. Keeping older workers in the workforce longer will likely require education and training programs to keep their skills up to date.

Silent generation

Born from 1925 to 1942, these are the children of the Great Depression and World War II generation. Sensitive rock 'n' rollers, Vietnam protesters, and Civil Rights advocates, they can adapt easily between generations and negotiate change well, avoiding risk taking. This generation set the stage for the baby boomer generation. Many have quit the workforce and are receiving Social Security and Medicare benefits. The new elderly bring more income and wealth and carry clout in the political arena. Lobbying efforts by activist seniors changed laws concerning rising medical costs and health care. Many retired seniors are taking a heavy toll on the health care system, contributing to skyrocketing health care system costs. AARP is one organization that represents the interests of seniors through active lobbying. And this is just the beginning of a new surge of activism by such organizations, especially as boomers begin retiring.

Why should businesses care?

In the future, organizations will need to be sensitive to the generational mix of employees. As younger workers rise within companies, they will want assurances that the positions currently held by older workers will be available for them to fill. However, if older workers hold on to these positions indefinitely, the younger generations will feel that their prospects are limited. Many may lose motivation and look elsewhere for work. Creating mentoring relationships in which an older worker trains a new, younger worker is an excellent way to help ensure that the organization retains the older worker's hard-won knowledge and expertise.

DIVERSITY—New Faces in the Workplace

Demographic forces in America will present both obstacles and opportunities for employers of choice in the next decade. Creating cultural diversity and flexible workplace arrangements will be key to sustaining a competitive edge.

Women

Even in today's battered economy, more women are employed than ever before. The participation of women in the workforce has progressively increased over the past 50 years. By 1997, according to the Bureau of Labor Statistics, nearly 77 percent of American women aged 25 to 54 were in the labor force. That figure is up from 57 percent in 1976 and just 37 percent in 1950. In 2003, women accounted for about 60 to 76 percent of new workers in the United States (this number was 43% in 1970). Today women account for 46 percent of American workers. According to the U.S. Department of Labor, women occupy 40 million of the 65 million new jobs added to the U.S. economy between 1964 and 1997. They are also the majority of the recipients of associate's, bachelor's, and master's degrees in the United States today.

Although organizations have made big strides toward achieving gender equality, women remain disadvantaged in the labor market. Over the past 10 years, women have increased their presence in the paid workforce but hold less prestigious jobs and earn less than men. Most jobs held by women are in teaching and nursing, says Elena Silva of the American Association of University Women. However, the number of women earning degrees in key areas, such as computer science, engineering, and information technology declined by 11 percent. Those careers pay the highest wages. Women are missing out, and the U.S. high-tech industry is being hurt.

A research study by Catalyst, a nonprofit organization that works to advance women in the workforce, found that women represented 12.5 percent of the corporate officers among all *Fortune* 500 companies. In 2000, 48.9 percent of all corporate officers had line responsibility. Of all line officer jobs, 92.7 percent were held by men, while women filled the remaining 7.3 percent. In addition, for every dollar earned by men during the year, women earn just 75 cents, according to the Women's Bureau of the U.S. Department of Labor.

To attract more women to the workplace, organizations will need to create more flexible work arrangements, such as flexible hours, telecommuting, and family leave, especially as demographic forces put a squeeze on the labor supply. A recent report by the National Foundation for Women Business Owners found that the number of women-owned businesses in the United States more than doubled between 1987 and 1999.

U.S. population

In the coming years, the non-Hispanic white portion of the U.S. population will become considerably smaller in relation to other racial and ethnic groups. By 2050, according to the Census Bureau, non-Hispanic whites will make up less than 53% of the population, down from 72% in 2000. Filling the gap will be Americans of Hispanic descent, Asians, and Pacific Islanders. African-Americans will increase from 13 percent to 15 percent of the population, Hispanics from 11 percent to 24 percent, and Asians and Pacific Islanders from 4 percent to 9 percent.

Forty years after the Civil Rights Movement of the 1960s, African-Americans still only hold 8.2 percent of executive positions, according to the U.S. Department of Labor. Hispanics hold 5 percent of top positions. Women comprise just 12.5 percent of corporate officers and represent 4.1 percent of all top wage earners, according to a survey by Catalyst. For minority women the situation is even worse: women of color hold just 1.3 percent of senior jobs.

Hispanics in the U.S.

Growth in the Hispanic population will be a major factor in the U.S. overall population growth in the years ahead. Between 2000 and 2020 the number of Hispanics is expected to more than double. Hispanics accounted for nearly half the growth in the U.S. population during the past two years and are now the largest minority group in the United States. Hispanics numbered 38.8 million as of July 2002. That was an increase of almost 10 percent or 3.5 million since April 2000, according to the Census Bureau. Within four years, Hispanics will be the largest minority group in the United States. According to Charles Louis Kincannon, Director of the Census Bureau, Hispanics make up 13.5 percent of the total population. The Latin population is increasing in many states, from 23 percent in Wyoming to almost 400 percent in North Carolina.

By 2050 the country's Hispanic population will triple to almost 100 million from the current 30 million and comprise a full quarter of the U.S. population. The states of Arizona, Texas, California, and Florida are projected to have a majority of Hispanic citizens by 2050. Hispanics are a group composed of many diverse nationalities including Puerto Ricans, Mexicans, Cubans, Dominicans, South Americans, Spaniards, and others.

California Latinos

- Highest rate of male participation in labor force
- Lowest use of public assistance
- Highest rate of family formation
- Spend twice as much on mortgages
- 450,000 middle-class households in Los Angeles
- 97 percent work in the private sector
- 210,000 Latino-owned businesses
- Buying power increases $1 billion every 6 weeks
- Reputation for brand loyalty

Data: David Hayes, Center for Study of Latino Health, University of California, Los Angeles, 1998.

Why should businesses care?

Young Hispanics are becoming increasingly politicized and, as with other immigrant groups in the past, are beginning to look at ways to find better housing, health care, and education opportunities. Since the Hispanic population is younger than the general population and also increasingly affluent, its buying and market power will grow significantly.

The growing racial and ethnic diversity of organizations means a greater need for people with different backgrounds and cultures to work collaboratively and to find better ways of integrating the local with the global. How can we best help organizations build diversity into performance management programs and train managers in the skills they need to motivate people from diverse cultures and ethnicities?

THE COMING JOB CRISIS—Why Worry Today?

How can there be worries about labor shortages when so many qualified workers are standing in unemployment lines? The national unemployment rate currently stands at 6.4 percent, and the economy continues to shed jobs. More than 3.2 million job cuts have been announced since the recession in 2001. Despite these alarming statistics on the unemployed, severe labor shortages threaten employers across the nation. In the next five years, labor shortages similar to those experienced in 1999 are likely. According to the U.S. Bureau of Labor Statistics, in less than seven years, there will be nearly 168 million jobs in the United States, but only about 158 million people in the workforce to fill them—a gap of 10 million unfilled jobs. The supply of labor will fall seriously short of the demand for skilled and unskilled workers.

- According to Buck Consultants, a human resources consulting firm, two-thirds of hospitals nationwide are experiencing labor shortages. This number is up from 55 percent in 2001. The shortage of health care workers is expected to worsen despite the increase in enrollment in undergraduate nursing programs.
- The construction industry should be adding about 225,000 workers per year to offset attrition and retirements; however, qualified workers have fallen about 65,000 to 80,000, says the National Association of Home Builders.
- In a white paper released by the National

Association of Manufacturers, the skilled worker gap will start to appear in 2004 and grow to 5.3 million workers by 2010 and 14 million by 2020. Including unskilled workers, the gaps will be 7 million in 2010 and 21 million in 2020.

- In a recent study by the Cornell University School of Hotel Administration, recruiting, training, and retaining the best employees was ranked as the number one concern for American restaurant owners.
- Computer and technology-related jobs are expected to experience the biggest growth spurts during the next 10 years. The Bureau of Labor Statistics projects that more than 1.9 million jobs will be added in technology-related occupations by 2010, including computer software engineers, systems analysts, systems managers, computer programmers, and computer support specialists.
- According to the Information Technology Association of America, there will be only 750,000 workers to fill the 1.6 million new jobs opening up this year. Looking ahead to 2005, nearly one million technology jobs in the United States may go unfilled.
- The most acute job shortages may be in two key groups: managers, who tend to be older and closer to retirement, and skilled workers in high-demand, high-tech jobs. For example, at Sprint, half of the 6,000 field and network technicians are over 50. At Cigna Systems, about a quarter of the 3,400 IT workers will reach 55 or older this decade.
- Outsourcing of labor abroad will barely make a dent in the number of jobs that will need to be filled. Martin Kenney, a professor at the University of California at Davis, predicts 1.6 million jobs will move offshore versus the 3.3 million jobs predicted by Forrester Research. Current studies are not conclusive as of yet.

Demographic forces at work

- *Aging global populations.* Two out of three people who have ever reached age 65 are alive today. In Western Europe and Japan the percentages of citizens 65 and older are higher and will reach 20 percent sooner than in the United States. In the next 15 years the United States will see 69 percent more 55- to 70-year-olds—10 million more than today. Conversely, there will be two million fewer 25- to 50-year-olds in 15 years—a drop of four percent.
- *People are living longer.* Developing countries are experiencing the highest growth of life expectancy. The life expectancy at birth in the more developed countries is expected to increase from 75.8 years to 81.6 years by 2050 according to United Nations data. In the United States, life expectancy at birth (female/male) is expected to jump from 79/72 years to 84/79 years in 2050.
- *Median age is up.* According to a data report by the United Nations, higher life expectancy will raise the average age to 50 years in Japan and Sweden and 47 years in the United Kingdom by 2050. In the U.S. the average age of the population will grow from about 35.8 in 2000 to over 40.3 years in 2050. By contrast, less developed countries will have an average median age of only 24.1, expected to increase to 35.7 by 2050.
- *Retiring workers.* For decades 76 million baby boomers have crowded the American workplace. But as this population ages, there won't be enough younger people to fill those jobs. Companies are already worried about keeping older workers on the job. For example, as of 2000, the average registered nurse was 43 years old. One in every two nurses will reach retirement age by 2015. A nursing association in Missouri predicts that in that state within the next few years nurses over the age of 50 will outnumber those in their 20s by a ratio of four to one. The same demographic trends are occurring in other developed countries.
- *Replacement of workers.* Not enough workers may be available to replace retirees. In Great Britain, as the number of workers older than 50 grows and the number of younger workers than 30 shrinks, the average age of the workforce jumped by a year and a half to 39 and is expected to reach 40 in the coming years. In Australia the number of workers between the ages of 20 and 44 grew by 24 percent from 1983 to 1992. Between 1993 and 2002 the number of workers in this age group declined by 6 percent, according to the Australian Bureau of Statistics.
- *International migration.* During the past 40 years international migration has increased. In the 1960s the average number of immigrants per year was about 7 million globally, today that figure is expected to reach 17 million per year. Immigration is becoming an economic necessity in many developed countries, especially those with declining population growth and fewer workers contributing to their economic status. Immigrants in the United States are filling both low-paying jobs

and high-paying, high-skilled jobs. Some countries, such as Italy and Canada, have made immigration a priority and eased immigration restrictions to draw a large pool of workers. Already Filipinos have been moving in large numbers to Japan, Korea, and Italy over the past 10 years. Scotland's government recently announced new measures to boost its shrinking and aging population by opening their borders to immigrants. In the next 10 years major developed countries will continue to encourage immigration for economic reasons.

- *Baby boomers in the United States.* If baby boomers were to retire en masse at 65, employers would face a severe labor shortage. However, very few boomers have saved enough for retirement. With evaporating 401(k)s, low savings and pensions, and shrinking Social Security benefits, boomers may have to continue to work both to stay active and out of financial necessity. Thirty-eight percent of baby boomers report having less than $10,000 in retirement savings, according to a study by Public Agenda, a nonprofit research group in New York. According to AARP, 80 percent of boomers surveyed said they would continue to work in some way after retirement and 23 percent said they would work part-time because they need the income.
- *Fewer college grads.* Many of today's workers as well as future generations of workers lack both basic and specialized skills needed in the present and future workplace. Graduation rates among the nation's colleges and universities are declining. In 2002, 51% of college students graduated within five years of initial enrollment. That figure is down from 55% in 1988 according to education assessment company ACT. Graduation rates among public universities have dropped from 48% in 1998 to 41% in 2002. Within 10 years a 33% shortfall in graduates with four-year degrees or higher is expected. By 2008, more than 20 million jobs are expected to be added to the economy. Fully 40% of this growth will be in occupations requiring at least a two-year degree, and 30% will require a bachelor's degree or higher.
- *U.S. students lag behind in academic scores.* According to the Third International Mathematics and Science Study, a 1999 international test in which eighth graders participated, U.S. students lag behind their peers in many other industrialized countries in math and science. Students in Australia, Belgium, Canada, Finland, Hungary, Japan, Korea, the Netherlands, Singapore, and Taiwan outperformed U.S. students when tested on both subjects.
- *Fewer science and math majors.* Top graduates from U.S. colleges are increasingly rejecting careers in science and engineering, according to a study by the University of Washington. Instead of pursuing the few openings for scientists in academia or entering low-paid apprenticeships in engineering and other technical professions, science grads are choosing higher paying, faster growing jobs in business and health care. With the notable exception of biological sciences, many top U.S. students with potential to become scientists are selecting other career paths, says the study's coauthor William Zumeta, associate dean of the Daniel J. Evans School of Public Affairs. Europe is experiencing a similar trend of students turning their backs on science careers.
- *Developing countries.* While developed countries are looking elsewhere for labor, developing countries, such as China, Brazil, and Mexico, are reaping the economic benefits of a younger population. China, after two decades of a one-child policy, has achieved a fertility rate of only 1.8 children per woman. Nearly a quarter of China's 1.3 billion people are under age 15, and only 7% are over age 65. Huge numbers of Chinese youth are entering the workforce, providing that country with a productive labor force for many years to come. Although two-thirds of China's population lives in the countryside, young people are moving increasingly into the cities, creating huge employment and housing challenges.
- *Mexico.* Mexico is in a disadvantageous position because it does not have the number of jobs needed for the 1.2 million Mexicans who enter the labor market yearly. As a result it is exporting a large part of its population—younger workers—to the United States. In the 1970s Mexico had a population of about 50 million, and only 30,000 people left annually for the United States. Today the population is about 100 million and about 380,000 leave each year.

Why should businesses care?

Retaining talented workers is the most economically viable option for companies to maintain productivity and achieve competitive advantage. Implementing a program to prolong the working life of older workers should include flexible hours, financial benefits, reducing workloads through the use of part-time or part-year schedules, and job sharing. Mentoring would transfer knowledge from more experienced workers to younger, less skilled workers. Another option is for companies to enhance their public image by getting involved in school-to-work and worker-student mentoring programs.

Shortages of skilled workers will stimulate employers to demand increased vocational training. A shortage of nurses practicing in health care environments has prompted universities and colleges to add fast-track programs to their curricula. Most acute shortages of labor will occur among workers that have at least some college education. The net effect of these trends will be an overall shortage of perhaps 20 million workers, including 10 to 15 million workers with at least some postsecondary education or training.

The labor supply shortages experienced during the booming 1990s is a small glimpse of what's ahead in the next 10 years. When the economy begins booming again and unemployment drops, organizations will compete for the very best talent, as in 1999. To recruit, hire, and retain top people, organizations need to devote more time and resources to hiring, training, and maintaining skilled workers to fuel performance and increase profits in the emerging new economy. Understanding the needs of this diverse workforce is paramount for businesses. Therefore, business leaders must ask, "What are we doing to prepare for the coming squeeze? What are we going to do when we are in a growth mode? If there is an expansion, then what's next? Are we ready?"

INTEGRATING TECHNOLOGY AND THE HUMAN SPIRIT

A technological revolution is changing the world in which we live, work, and play. Advances in communication and information technology, such as the Internet, have fueled awareness of and access to information around the globe. Breakthroughs in biomedical engineering, such as stem cell research, promise to improve the quality and length of human life. Advances in materials technology and nanotechnology will produce items and systems that are smaller, smarter, multifunctional, and environmentally safer and friendlier.

However, this explosion of technology has its shortcomings. In the 1960s, futurists predicted that by the 1990s we would be working fewer than 25 hours per week, have a slower paced life, and enjoy more leisure time. Not so! Today, advanced technologies, such as voice mail, email, and text messaging, which were supposed to make work easier, are adding tremendous stress for the average worker. Some are working 24/7 to keep up with the technology. How will this impact the human spirit?

Blanchard clients express concern over not being able to effectively interface and manage people with the new technology. Computers can do a lot of things, but you still need the human side. The frustration is in putting together a good knowledge management system that works not only for the organization but for the workers. The best database program in the world needs to be part of an employee's job and not just something he or she has to do. Integrating technology, people, and processes so that all coexist will be a challenge to leaders in the future. How can leaders create a sense of community, spirit, and values that will guide business decisions and practices influenced by technology?

Technologies to look for in the future

William Illsey Atkinson, author of *Nanocosm,* predicts incredible nanotech leaps in the next 15 years. The following are future technologies that will forever change how we work, live, and play.

Two to five years from now

- Car tires that need air only once a year
- Self-assembly of small electronic parts based on artificial DNA
- New artificial semiconductors based on proteins
- Instant, error-proof pregnancy tests
- Complete medical diagnostic laboratories on a single computer chip
- Go anywhere concentrators that produce drinkable water from air

Five to 10 years

- Erasable and rewritable paper for programmable books, magazines, and newspapers
- Powerful computers one can wear or fold into one's wallet
- Bulletproof armor based on nano-biomimicry of mother-of-pearl
- Light, efficient ceramic car engines
- Intelligent hearing aids that duplicate the ear's ability to distinguish speakers

- Drugs and drug-delivery systems that turn AIDS and cancer into lower-level manageable conditions
- Smart buildings that self-stabilize during earthquakes or bombings
- Pharmaceuticals tailored to the individual

Ten to 15 years

- True artificial intelligence that is so sophisticated one cannot tell if one is communicating with a human or a machine
- Paint-on computer and entertainment video displays
- Guyed structures 20–100 miles high for satellite launches and direct communication
- Instant and automatic heating, cooling, and materials sorting at zero-energy cost from semi-intelligent devices that sort single molecules
- Elimination of invasive surgery, since bodies can be monitored and repaired almost totally from within

Connective Technologies—A handful of connective technologies will shape the world over the next five years. As the evolution of advanced wireless technologies are adopted widely, they will enable people to connect multiple devices to the network anytime, anyplace. Peer-to-peer networks and distributed architectures could replace the Internet. Experiments with new architectures such as the GRID are no longer just ways for kids to get free music. These experiments combine advanced wireless network technology, which can be deployed by individual houses within a neighborhood but then serve as a freestanding network across the neighborhood, bypassing ISPs for blocks.

Breakthroughs in small-scale power and new display materials will create a new arena for digital display. Microbattery technology will make it possible to print a power source onto a flat surface or integrate it onto an integrated circuit. New organic LED and LEP technologies will make it cheap to print displays using ink-jet technology onto all kinds of surfaces, including fabrics.

The evolution of electronic tags will redefine consumer goods, often focusing more on the packaging than on the product itself. Digital tagging languages such as XML will liberate data from databases while UBL will make it possible for data to identify itself to query processes on the Web.

The physical world will become increasingly intelligent and communicative, both with people and machines. Smart materials will combine built-in reactivity such as responses to light, heat, pressure, and even molecular-level changes with the ability to communicate wirelessly with other materials or remote processing stations that can analyze and adjust the material's response to its environment.

Groupware—Over the next five years, there will be a convergence of applications such as instant messaging, email, document management, and information filtering and refining software, including IM-Plus, screen- and application-sharing programs such as NetMeeting and WebEx, and peer-to-peer business applications such as Groove.

Over the next five years, companies will rely less on HR and upper management to control the movement of employees into assignments. Instead they will use the open marketplace for talent, drawing from online job posting systems, for example. Locator software and talent mapping systems will support this trend.

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