

53 Trends Now Shaping the Future



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By Marvin J. Cetron and Owen Davies

INTRODUCTION

For some four decades, Forecasting International has conducted an ongoing study of the forces changing our world. One of the values of tracking major trends over a long time frame is that we can see whether sudden shifts are indicators of seismic transitions or merely temporary anomalies or fads.

This latest edition of Forecasting International's report adds three new trend areas to its knowledge base of major forces shaping the future: mass migration and its impacts (Trend 6), the rise of militant Islam (Trend 9), and the evaporation of privacy (Trend 17).

Forecasts stemming from these trends range from the very near term (2005-2010) to medium-range futures (up to 2050), but the authors make no attempt to speculate on very-long-range futures that may prove of little practical use. Whatever your concern, some of these trends will have a very direct impact upon it. Others will help to form the general environment in which we live and work. They all merit attention from anyone who must prepare for what lies ahead.

The authors—and the World Future Society—welcome your feedback.

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General Long-Term Economic and Societal Trends

1 The economy of the developed world will continue to grow for at least the next five years. Any interruptions will be relatively short lived.

- The U.S. economy has been expanding continuously since the fourth quarter of 2001. Annual growth in 2004 was expected to reach 4%, a level that economists believe can be sustained.

- The real-estate market in the United States remains extraordinarily resilient, thanks to the lowest mortgage rates in some 40 years. Existing-home sales were projected to rise 7.3% in 2004 to a record 6.5 million homes. The National Association of Realtors expects another record in 2005, along with increases in new-home sales and housing starts.

- In spring 2004, new jobs finally started to appear in significant numbers—308,000 in March, 280,000 in April, and 248,000 in May. Job creation lagged through the summer, but bounced back to 337,000 in October, nearly twice the consensus forecast.

- Inflation remains under control, with consumer prices up 2.5% in September 2004 from their levels 12 months earlier and rising only 0.2% since August.

- Relaxation of borders within the European Union has brought new mobility to the labor force. This is making for a more efficient business environment on the Continent. Expansion of the EU by 10 more members in late April 2004 can only improve economic performance there in the years ahead.

- After prolonged recession, the French and German economies appeared to be stable or growing in 2004—Germany is flat, France is expanding at a solid 4% per year—while the British economy never did fall into recession and is now ticking along at 3.5% growth. In all, it appears that the European economy as a whole grew by 0.5% in 2003 and did better in 2004.

- Japan's long-suffering economy is growing for the first time in years—by no less than 6% annually



Trend 1 Resilient real estate:
Housing market will remain healthy in the United States.

in 2003 and around 4.5% in 2004. Exports surged by 12.5% in 2003 to record levels and have continued growing at that rate ever since. This is expected to slow as China cools its economy and demand lags in the United States. Yet, it seems that Japan will remain much healthier than it had been in more than a decade.

- China's economy grew by a spectacular 9.1% in 2003 and slowed to "only" 9.1% in the third quarter of 2004, suggesting that the economy will stabilize at sustainable growth rates rather than falling into recession.

- New growth among all these trading partners should create a "benevolent cycle," in which the health of each partner helps to ensure the continued health of the rest for at least the next several years.

- Many nations of the former Soviet Union are bringing order to their economies, proving themselves viable markets for goods from western Europe. Recently, even Russia appears to be stabilizing its economy, long the weakest link in its region. The gradual development of oil fields in Kazakhstan should further this process.

- Worldwide, improved manufacturing technology will continue to

boost productivity and reduce the unit cost of goods. At the same time, workers who remain on the job longer will offset slow growth in the labor force, while the globalization of business will keep pressure on salaries in the developed countries. Thus, both prices and wages should remain under control.

Implications: The economic downturn of 2000 and 2001 has run its course. The current round of new growth will spread throughout the developed world. It should continue for the remainder of this decade.

Economic unification is promoting all manner of trade within Europe. In the long run, the newly capitalist lands of the former Soviet Union should be among the fastest growing new markets. By 2010 or so, India will expand faster than any other market in the world, with China falling into a close second place.

Labor markets will remain tight, particularly in skilled fields.

This calls for new creativity in recruiting, benefits, and perks, especially profit sharing. This hypercompetitive business environment demands new emphasis on rewarding speed, creativity, and innovation within the workforce.

2 The world's population will grow to 9.2 billion by 2050.

- Average annual growth worldwide peaked at 2.19% in 1963 and has fallen steadily since. The U.S. Census Bureau's International Data Base projects that annual growth will fall below 1% in 2016 and below 0.5% by 2047.

- The greatest fertility rates are found in those countries least able to support their existing populations. Countries with the largest population increases between 2000 and 2050 include Palestinian Territory (217%), Niger (205%), Yemen (168%), Angola (162%), the Democratic Republic of Congo (161%), and Uganda (133%).

- Even these estimates may be much too low. According to the Center for Strategic and International Studies (CSIS), most official projections underestimate both fertility and future gains in longevity.

- In contrast to the developing world, many industrialized coun-

Trend 2**World Population**

Year	Population (billions)	Average annual growth rate (%)
1950	2.56	1.47
1960	3.04	1.33
1970	3.71	2.07
1980	4.45	1.69
1990	5.28	1.57
2000	6.08	1.21
2010	6.82	1.09
2020	7.54	0.90
2030	8.18	0.71
2040	8.72	0.58
2049	9.15	0.47

Source: U.S. Bureau of the Census, International Data Base



Trend 2 Arab mother and child in the Palestinian Territory, which has one of the fastest-growing populations in the world.

tries will see fertility rates below the replacement level and hence significant declines in populations, excluding the effects of immigration. This means that the population of the developed nations will fall from 23% of the total world population in 1950 and about 14% in 2000 to only 10% in 2050.

- In about 10 years, the workforce in Japan and much of Europe will be shrinking by 1% per year. By the 2030s, it will contract by 1.5% annually.

Implications: Rapid population growth will reinforce U.S. domination of the global economy, as the European Union falls to third place behind the United States and China.

To meet human nutritional needs over the next 40 years, global agriculture will have to supply as much food as has been produced during all of human history.

Unless fertility in the developed lands climbs dramatically, either would-be retirees will have to remain on the job, or the industrialized nations will have to encourage even more immigration from the developing world. The third alternative is a sharp economic contraction and lower living standards.

Barring enactment of strict immigration controls, rapid migration will continue from the Southern Hemisphere to the North, and especially from former colonies to Europe. A growing percentage of job applicants in the United States and

Europe will be recent immigrants from developing countries.

3 The population of the developed world is living longer.

- Each generation lives longer and remains healthier than the last. Since the beginning of the twentieth century, every generation in the United States has lived three years longer than the previous one. An 80-year-old in 1950 could expect 6.5 more years of life; today's 80-year-olds are likely to survive 8.5 more years.

- Life expectancy in Australia, Japan, and Switzerland is now over 75 years for males and over 80 for females.

- A major reason is the development of new pharmaceuticals and medical technologies, which are making it possible to prevent or cure diseases that would have been fatal to earlier generations. In many developed countries, credit also goes to government health programs, which have made these treatments available to many or all residents. In the developing lands, a primary cause is the availability of generic drugs, which cut the cost of care and make health affordable even for the poor.

- These figures are much too conservative because they assume that life expectancy will grow more slowly in the future, argues CSIS.

- Medical advances that slow the fundamental process of aging now seem to be within reach. They could

well help today's middle-aged baby boomers to live far longer than even CSIS anticipates today.

- Any practical extension of the human life span will prolong good health as well and will reduce the incidence of late-life disorders such as cancer, heart disease, arthritis, and possibly Alzheimer's disease.

Implications: The growing concentration of wealth among the elderly, who as a group already are comparatively well off, creates an equal deprivation among the young and the poorer old. This implies a loss of

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Trend 3 Living longer and healthier in developed world. Medical advances slow the ravages—and reduce the costs—of aging.

purchasing power among much of the population; in time, it could partially offset the forces promoting economic growth. Global demand for products and services aimed at the elderly can only grow quickly in the coming decades.

Developed countries may face social instability as a result of competition for resources between retirement-age boomers and their working-age children and grandchildren. In the United States and other developed countries, public spending on retirement benefits could grow to one-fourth of GDP by 2050, even as the number of workers available to support each retiree declines sharply, according to CSIS.

Barring dramatic advances in geriatric medicine, the cost of health care is destined to skyrocket throughout the developed lands. This could create the long-expected crisis in health-care financing and delivery.

However, dramatic advances in geriatric medicine are all but inevitable. Paying the high cost of new drugs and technologies will reduce the cost of caring for patients who would have suffered from disorders eliminated or ameliorated by new therapies. In the end, cost increases and reductions should just about balance out, leaving the average American health-care bill nearly unchanged.

4 The elderly population is growing dramatically throughout the world.

- Worldwide, the elderly (age 65 and older) numbered 440 million and represented 6% of the population in 2002. The elderly are projected to nearly double by 2020 (to over 9% of total population) and more than triple by 2050 (to nearly 17%), according to the U.S. Census Bureau's International Data Base.

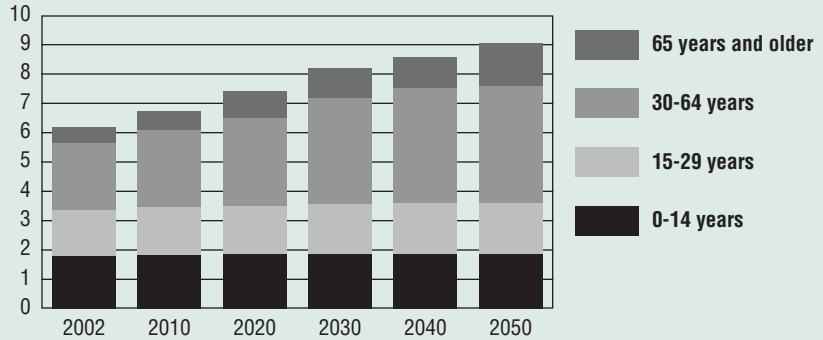
- In the developed world, people over 65 made up 15% of the population in 2000, and will grow to 27% in the next half century, according to CSIS.

- Throughout the developed world, population growth is fastest among the elderly. In Europe, the United States, and Japan, the aged also form the wealthiest segment of society.

Trend 4

Population Growth of Age Groups

Population in billions



Source: U.S. Census Bureau, International Data Base

Trend 4

Ageing Vulnerability Index

(rankings from least to most vulnerable)

Low Vulnerability

- Australia
- United Kingdom
- United States

Medium Vulnerability

- Canada
- Sweden
- Japan
- Germany
- Netherlands
- Belgium

High Vulnerability

- France
- Italy
- Spain

Source: Center for Strategic and International Studies and Watson Wyatt Worldwide, *The 2003 Aging Vulnerability Index*.

Rapidly aging populations make the economies of countries like Spain, Italy, and France vulnerable to rising old-age dependency costs.

- In Germany, the retirement-age population will climb from under 16% of the population in 2000 to nearly 19% in 2010 and 31% in 2050.

- By 2050, one in three Italians will be over 65, nearly double the proportion today.

- Japan's over-65 population made up 17% of the total in 2000 and is

projected to rise to 22% in 2010 and nearly 37% in 2050.

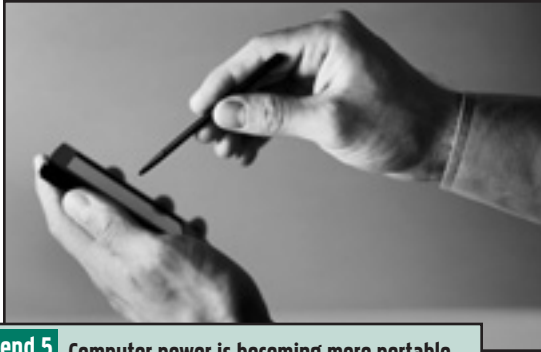
Implications: Not counting immigration, the ratio of working-age people to retirees needing their support will drop dramatically in the United States, Germany, Italy, Russia, and Japan by 2050. This represents a burden on national economies that will be difficult to sustain under current medical and social-security systems.

In the next two to three decades, shortages of health workers will loom large in "aging vulnerable" countries. The United States in particular will need at least twice as many physicians specializing in geriatrics as its current 9,000, as well as half a million more nurses by 2020.

5 The growth of the information industries is creating a knowledge-dependent global society.

- More and more businesses and entire industries are emerging that are based on the production and exchange of information and ideas rather than exclusively manufactured goods or other tangible products. "Knowledge workers" refers to professionals who provide skills and services not directly related to producing goods—e.g., accountants versus auto mechanics, architects versus construction workers.

- Telecommuting is a growing knowledge-age phenomenon. About 80% of companies worldwide now are estimated to have employees who work at home, up from 54% in



Trend 5 Computer power is becoming more portable and more ubiquitous, enabling more people to become knowledge workers.

2003. The number of telecommuters in the United States grew 63.2% between 1999 and 2003.

- The Internet makes it possible for small businesses throughout the world to compete for market share on an even footing with industry leaders.

- Internet usage in the United States grew by 4 million new users a month in the year starting February 2003. According to the National Telecommunications and Information Administration, 54% of the U.S. population was online by 2001. By early 2004, 75% were Internet connected.

- In the United States, the “digital divide” seems to be disappearing. Internet access is increasing faster in black and Hispanic households as they catch up with white households. As of 2001, 32% of Hispanic and 30.8% of African American households were online. By early 2004, 61% of black children and 67% of Hispanic youngsters had Internet access at home, compared with 80% of white children.

- Computer appliances—whether desktop, laptop, or handheld—are becoming more integrated, portable, and powerful. Most will combine multimedia communication functions and real-time voice translation, so that conversations originating in one of seven or eight common languages can be heard in any of the others. These technologies will enable even more people to become knowledge workers—or at least knowledge-enhanced workers.

Implications: Knowledge workers are generally better paid than less-

skilled workers, and their proliferation is raising overall prosperity.

Even entry-level workers and those in formerly unskilled positions require a growing level of education. For a good career in almost any field, computer competence is mandatory. This is one major trend raising the level of education required for a productive role in today’s workforce. For many workers, the opportunity for training

is becoming one of the most desirable benefits any job can offer.

New technologies create new industries, jobs, and career paths, which can bring new income to developing countries. An example is the transfer of functions such as technical support in the computer industry to Asian divisions and service firms.

For some developing countries, computer skills are making it faster and easier to create wealth than a traditional manufacturing economy ever could. India, for example, is rapidly growing a middle class, largely on the strength of its computer and telecom industries. Many other lands will follow its example.

6 Mass migration is redistributing the world’s population.

- Immigration is quickly changing the ethnic composition of the U.S. population. In 2000, Latinos made up 12.6% of the U.S. population, but by 2050, they will account for 24.5%. Asians in the United States, currently 3.8% of the population, will comprise an estimated 8% of the population by 2050, according to the latest U.S. Census Bureau figures.

- Higher fertility rates among the immigrant Latino population will accelerate this trend. As of 2002, women in the United States produced about two children during their lives, just enough to maintain the population. Among Hispanics, the average was more than 2.7 births per woman. Among Mexican immigrants, it was nearly 2.9.

- Immigration to western Europe from eastern Europe, North Africa,

the Middle East, and the Indian sub-continent continues.

- More than 400,000 legal immigrants from central Europe now live and work in western Europe. Between 3 million and 4 million more migrants are expected to join them in the next 25 years.

- In China, 98 million people have moved from rural areas to cities in recent years, without ever leaving the country.

- There are about 80 million international migrant workers in the world, according to the United Nations. About half settle in Europe; the rest are divided evenly between North America and Asia.

Implications: Impoverished migrants will place a growing strain on social-security systems in the industrialized countries of Europe and North America. Similar problems will afflict the urban infrastructures of China and India.

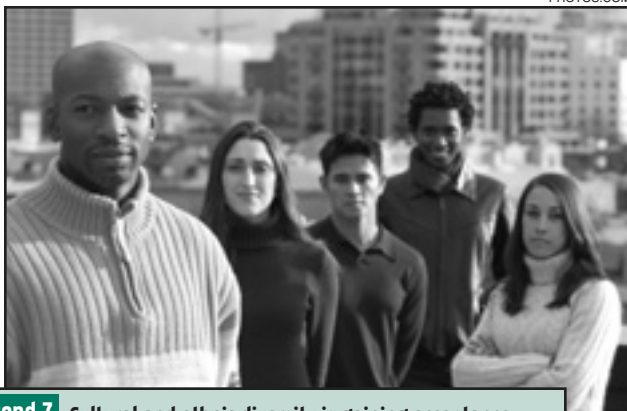
Remittances from migrants to their native countries are helping to relieve poverty in many developing countries. These payments are expected to exceed \$100 billion in 2004.

Significant backlashes against foreign migrants, such as the skinhead movement in Europe, will be seen more frequently in the years ahead. Backlashes will be seen even in the most peaceful lands. For example, in Scandinavia, resentment against foreign workers is strong, in part because they can return to their native lands after three years of employment and collect a pension equal to the minimum wage for the rest of their lives.

7 Despite some xenophobic reactions to immigrants, there is growing acceptance of cultural diversity. This is due to the unifying effect of mass media, which is promoting the growth of a truly integrated global society. However, this is subject to local interruptions and reversals.

- Migration is mixing disparate peoples and forcing them to find ways to coexist peacefully and productively.

- The Internet and Web and other technologies promote long-distance communication. People connect over the same computer networks and commercial databases.



Trend 7 Cultural and ethnic diversity is gaining acceptance, especially among younger generations around the world.

- Mass media, including television, radio, films, interactive games, and music, are homogenizing forces in global culture as they promote a common language, mores, and cultural reference points. In the United States, for instance, television encourages the spread of standard accents and language patterns.

- The globalization of business is having a similar impact. Throughout the United States and Europe, regional differences, attitudes, incomes, and lifestyles are blurring as business carries people from one area to another.

- Intermarriage also continues to mix cultures geographically, ethnically, socially, and economically.

- Minorities are beginning to exert more influence over national agendas as the growing number of African Americans, Hispanics, and Asians in the United States is mirrored by the expanding population of refugees and former “guest workers” throughout Europe.

- A 2001 poll by *Time* and Market & Opinion Research International found that 21% of young British adults viewed themselves as primarily European, rather than British. Some 31% of French Gen X’ers, 36% of Germans, and 42% of Italians also said they thought of themselves as primarily European.

- However, in many countries there are powerful reactions against these changes. The growth of the German neo-Nazi movement after unification in 1992 is one obvious example, though negative public opinion toward these views have kept ex-

remists’ activities in check.

Implications: While technologies increasingly facilitate cultural and professional exchanges around the world, local conflicts will continue to erupt in societies where xenophobia is common. Some of the most fervent culturist movements will continue to spring

from religious fundamentalism that would-be dictators and strongmen will exploit to promote their own interests. Terrorism especially will be a continuing problem.

Companies will hire ever more minority workers and will be expected to adapt to their values and needs. Much of the burden of accommodating foreign-born residents will continue to fall on employers, who must make room for their languages and cultures in the workplace. Public schools and libraries must prepare to shoulder the burden of preparing this future workforce.

8 The global economy is growing more integrated.

- Companies are increasingly

farming out high-cost, low-payoff secondary functions to suppliers, service firms, and consultants, which increasingly are located in other countries.

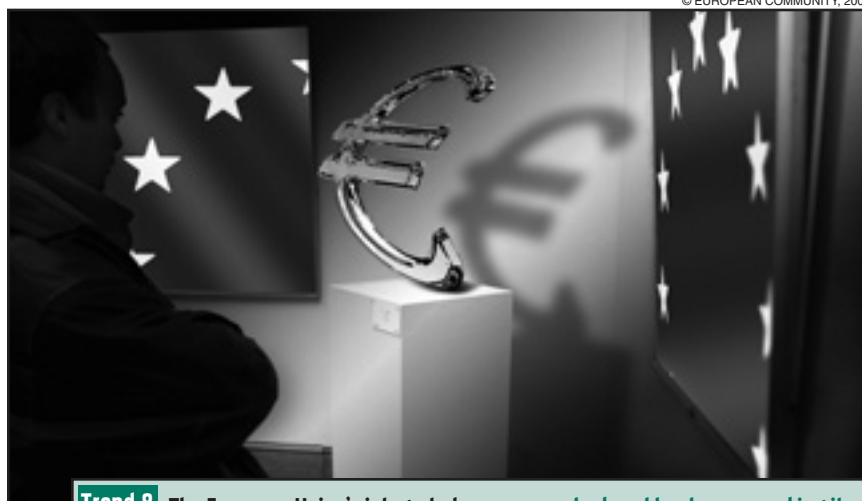
- Companies in high-wage countries also are outsourcing management and service jobs to low-wage countries. An estimated 3.3 million U.S. jobs are expected to migrate to India and China by 2015. Jobs in western Europe are migrating to eastern Europe, the former Soviet Union, and the English- and French-speaking former colonies of Africa. And India has begun to ship jobs to even-lower-cost countries in Africa.

- In the European Union, relaxation of border and capital controls and the adoption of a common currency and uniform product standards are making it still easier for companies to distribute products and support functions throughout the Continent.

- The ability of the Internet and cable-TV home shopping channels to bring manufacturers closer to remote customers is turning many retail industries on their heads.

Implications: The growth of e-commerce enables businesses to shop globally for the lowest-cost raw materials and supplies. In niche markets, the Internet also makes it possible for small companies to compete with giants worldwide with relatively little investment.

Demand for personnel in distant



Trend 8 The European Union’s integrated economy and relaxed borders are making it easier for companies to function.

countries will increase the need for foreign-language training, employee incentives suited to other cultures, aid to executives going overseas, and the many other aspects of doing business in other countries. As eastern Europe integrates more fully with the European Union, a major investment in personnel development will be needed over the next few years.

Western companies may have to accept that proprietary information will be shared not just with their immediate partners in Asian joint ventures, but also with other members of the partners' trading conglomerates. In high technology and aerospace, that may expose companies to extra scrutiny, due to national-security concerns.

9 Militant Islam is spreading and gaining power.

- It has been clear for years that the Muslim lands face major problems with religious extremists dedicated to advancing their political, social, and doctrinal views by any means necessary. Those problems often have spilled over into the rest of the world. They will do so again.

- In a 1994 terrorism study for the Department of Defense and other government clients, Forecasting International predicted that, by 2020, a strong majority of the world's 25 or so most important Muslim lands could be in the hands of extremist religious governments. At the time, only Iran was ruled by such a regime; Afghanistan's Taliban movement gained power two years later, and Sudan has since followed.

- Most of the Muslim lands are overcrowded and short of resources. Many are poor, save for the oil-rich states of the Middle East. Virtually all have large populations of young men, often unemployed, who are frequently attracted to violent extremist movements.

- The United States massively fortified the Muslim extremist infrastructure by supplying it with money, arms, and, above all, training during its proxy war with the Soviet Union in Afghanistan.

- American support for Israel has also made the United States a target

for the hatred of Muslim extremists. If the deteriorating situation in Palestine leads to more active conflict, or if Israel renounces any attempt to make peace with its neighbors, U.S. interests will be targeted by a new wave of terrorism.

Implications: Virtually all of the Muslim lands face an uncertain, and very possibly bleak, future of political instability and growing violence. The exceptions are the oil states, where money can still buy relative peace, at least for now.

Saudi Arabia is likely to be taken over by a fundamentalist regime on the death of King Fahd.

The overthrow of the Taliban in Afghanistan and of Saddam Hussein in Iraq have inflamed extremist passions throughout the Muslim world. This may make future fundamentalist revolutions more likely, rather than less so.

The West, and particularly the United States, is likely to face more—and more violent—acts of terrorism for at least the next 20 years.

Both Europe and the United States ultimately may face homegrown Muslim extremist movements. Thanks largely to waves of immigration since the 1980s, Islam is the fastest-growing religion in both regions. There are credible reports that extremist clerics in Europe are successfully recruiting young Muslims to the cause of *jihad* against their adopted homes.

Western interests also will be vulnerable in many countries outside the Muslim core. The strong international ties formed among Islamic militants during the anti-Soviet war in Afghanistan have produced an extremist infrastructure that can support terrorist activities almost anywhere in the world.

This development must be taken even more seriously, because, for the first time, a Muslim country—Pakistan—has nuclear weapons. Muslim extremists view this technology as an "Islamic bomb" that could be used to promote their cause. As the world has learned, some high-ranking Pakistanis have been willing to donate nuclear technology to other Muslims. From here on out, the possibility of nuclear terrorism is a realistic threat.

Trends in Values, Concerns, and Lifestyles

10 Societal values are changing rapidly.

Industrialization raises educational levels, changes attitudes toward authority, reduces fertility, alters gender roles, and encourages broader political participation. This process is just beginning throughout the developing world. Witness the increases in literacy, decreases in fertility, and broad voter turnout seen in India over the last five years.

- Developed societies will increasingly take their cue from Gen X and the millennial generation (aka Gen Y or generation dot-com), rather than the baby boomers who have dominated its thinking for most of four decades. This will tend to homogenize basic attitudes throughout the world, because Gen X'ers and especially the millennials around the globe have more in common with each other than with their parents.

- In the future, both self-reliance and cooperation will be valued—self-reliance because individuals will no longer be able to fall back on government social-security income, pensions, or other benefits, and cooperation because group action often is the best way to optimize the use of scarce resources, such as retirement savings.

- Post-September 11 worry over terrorist attacks have led Americans to accept almost without comment security measures that their vaunted love of privacy once would have made intolerable. This continues a long-established tendency in the United States to prefer a greater sense of safety at the cost of increased government surveillance and intervention in their lives.

- Once national security issues lose their immediacy, family issues will again dominate American society, at least through 2008: long-term health care, day care, early childhood education, and antidrug campaigns, as well as environmental concerns.

Implications: The highly polarized political environment that has increasingly plagued the United States in the 1980s and 1990s will slowly

moderate as results-oriented Gen X'ers and the millennials begin to dominate the national dialogue as voters and decision makers.

Current accounting reforms are just the leading edge of a wave of stockholder protection laws and regulations that can be expected within the next five years.

The demand for greater accountability and transparency in business will be crucial, not only in the U.S. business community, but also for countries that wish to attract international investors.

Reaction against changing values is one of the prime motives of cultural extremism, particularly in the Muslim world and in parts of India.

11 Young people place increasing importance on economic success, which they have come to expect.

- Throughout the 1990s—effectively, their entire adult lives—Gen X'ers and the millennials knew only good economic times, and the economic downturn at the turn of the century seemed to them a confusing aberration rather than a predictable part of the business cycle. Most expect to see hardship on a national level, but they both want and expect prosperity for themselves.

- Growing numbers of people now become entrepreneurs. Gen X'ers and the millennials are the most entrepreneurial generations in history.

- In the United States especially,

most young people have high aspirations, but many lack the means to achieve them. Only one in three high-school graduates goes on to receive a college degree. Many of the rest wish to go, but cannot afford the high cost of further schooling.

- Without higher education, expectations may never be met: Between 1978 and 2002, average hourly earnings for 23- to 27-year-olds grew by more than 9% a year for Americans with a bachelor's degree or higher, while those with less than a high-school diploma saw wages grow by just 2.4% a year, according to the U.S. Bureau of Labor Statistics (BLS).

Implications: This will prove to be a global trend, as members of generation X and the millennials throughout the world tend to share values. Gen X and millennial entrepreneurs are largely responsible for the current economic growth in India and China, where they are becoming a major force in the Communist party. In India, the younger generations dress and think like their American counterparts, not their parents. In China, the democratic fervor that spawned Tiananmen Square has been replaced by capitalist entrepreneurialism.

If younger-generation workers find their ambitions thwarted, they will create growing pressure for economic reform and deregulation. If reforms do not come fast enough in the developing world, disappointed expectations will raise the number of young people who emigrate to the developed lands.

Disappointment also will drive underemployed young men in the developing world into fringe political and religious movements. This could cause a new wave of terrorism and instability, with profound effects on the cultures and economies of the United States and other target countries.



Trend 12 International tourism is continuing to grow and will become an increasingly important industry for developing countries.

12 Tourism, vacationing, and travel (especially international) will continue to grow in the next decade.

- Over the next 10 years, travel and tourism are expected to grow by an average of 4.5% annually. By 2014, that will amount to a market of more than \$9.5 trillion, adding nearly \$7 trillion to the world's GDP.

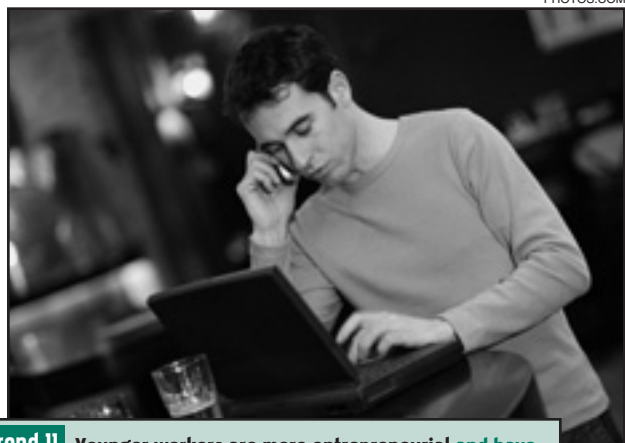
- The number of Americans traveling to foreign countries (excluding Canada and Mexico) increased at 5% per year from 1981 through 1996. Once current worries over the threat of terrorism recede, that growth will resume and will continue for the foreseeable future.

- In the United States, 2004 forecasts call for a rise in travel and tourism revenues to about \$568 billion, nearing the \$570.5 billion seen prior to September 11, 2001.

- The industry will create 3.3 million jobs worldwide. Jobs dependent on tourism will comprise nearly 14% of the global workforce.

- Direct employment will not grow quite as quickly, but it will be up 1.7% annually, to nearly 87.5 million jobs, while indirect employment will account for some 260 million jobs around the world.

- Chinese spending for international travel will reach \$100 billion by 2008. By 2020, according to the World Trade Organization, 100 million Chinese will fan out across the globe, replacing Americans, Japanese, and Germans as the world's most numerous travelers.



Trend 11 Younger workers are more entrepreneurial and have higher expectations of economic success.

- China soon will become the world's most popular destination as well, as preparations for the 2008 Summer Olympic Games focus international attention on Beijing. By 2020, China can expect 130 million international arrivals.

- By 2020, 50 million Indians are expected to tour overseas.

- Tourism will benefit as Internet "virtual" tours replace printed brochures in promoting vacation destinations. Web sites cover not only popular attractions, but also provide current, detailed information on accommodations, climate, culture, currency, language, immunization, and passport requirements.

- Multiple, shorter vacations spread throughout the year will continue to replace the traditional two-week vacation.

- More retirees will travel off-season, spreading travel evenly throughout the year and eliminating the cyclical peaks and valleys typical of the industry. Cruise ships will continue to lure retirees, and some liners are offering full-time residency—creating new options for assisted living arrangements, suggests an article in the *Journal of the American Geriatrics Society*.

Implications: The hospitality industry will grow at a rate of at least 5% per year for the foreseeable future, and perhaps a bit more. Tourism offers growing opportunities for out-of-the-way destinations that have not yet cashed in on the boom. This will make it an important industry for still more developing countries.

13 The physical-culture and personal-health movements will remain strong, but far from universal.

- Emphasis on preventive medicine continues to grow. In recent years, most insurance carriers in the United States have expanded coverage or reduced premiums for policyholders with healthy lifestyles. By 2007, 90% of insurers will offer such benefits.

- The health movement in Western culture has shifted from the desire to look better to the need to promote health.

- Health is continuing to improve in the United States, but at a slower

rate, according to a study by the United Health Foundation, the American Public Health Association, and the Partnership for Prevention. During the 1990s, health in the United States improved by 1.5% annually, based on such measures as smoking prevalence, health-insurance coverage, infant mortality rates, and premature deaths. During the 2000s, health improvement has slowed to just 0.2% a year, largely due to personal choices. The study cites a 97% increase in obesity since 1990 as especially troubling.

- The low-carbohydrate weight-loss fad trumps other health concerns. Though Japan and Korea closed their doors to American beef after one case of mad cow disease was discovered in December 2003, demand in the United States never faltered. Carb-avoiding dieters kept beef prices near record highs well into 2004.

- This trend has not yet had a similar impact on Europe, and people in many countries of the developing world still worry more about eating enough than eating well.

- Smoking is in general decline in the United States. Only 21% of Americans smoked cigarettes as of January 2000, down from 30% in 1983. Financial disincentives such as higher taxes on cigarettes should produce further declines of 10%. State and local antitobacco actions include more bans on indoor smoking in public places, such as restaurants, office buildings, and shopping malls.

- It appears that the antismoking movement is finally making its way to Europe. Ireland banned smoking from its pubs late in April 2004.

- The global obesity crisis is a significant countertrend to the physical-culture movement. Poor diet, physical inactivity, and associated obesity contribute to 47% of diseases and 60% of deaths worldwide, according to the International Association for the Study of Obesity.

- Developing countries that "Westernize" their diets by consuming more foods high in fat, sugar, and salt are at risk of epidemic obesity, including among children and adolescents.

Implications: As the nutrition and

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Trend 13 European Union's ad campaign against tobacco use simulates hard-hitting warning labels on cigarette packages.

wellness movements spread, they will further improve the health of the elderly.

Better health in later life will make us still more conscious of our appearance and physical condition. Thus, health clubs will continue to boom, and some will specialize in the needs of older fitness buffs. Diet, fitness, stress control, and wellness programs will prosper.

The cost of health care for U.S. baby boomers and their children could be much lower in later life than is now believed. However, Asia faces an epidemic of cancer, heart disease, emphysema, and other chronic and fatal illnesses related to health habits.

Like tobacco companies, producers of snack foods, liquor, and other unhealthy products will increasingly target markets in developing countries, where this trend has yet to be felt.

Chronic diseases related to obesity burden national economies and could thwart economic progress in developing countries.

14 Consumerism is still growing rapidly.

- A networked society facilitates a consumerist society. Shoppers increasingly have access to information about pricing, services, delivery time, and customer reviews on the Internet. Marketers, of course, can also check the competition's offer-



Trend 14 Consumerism is on the rise, and the younger generations appear particularly prone to the lure of shopping.

ings. This may gradually halt the decline of prices and shift competition increasingly to improvements in service and salesmanship.

- Consumer advocacy agencies and organizations will continue to proliferate, promoting better information—unit pricing, improved content labels, warning notices, nutrition data, and the like—on packaging, TV, and the Internet.

- Discount stores such as Home Depot and Wal-Mart, factory outlets, and food clubs will continue to grow in the United States, a trend that has just begun to spread to Europe and Japan.

- Children in the United States become shoppers as young as age six and become aware of brands at age two or three, due largely to child-focused advertising, says researcher Juliet Schor in *Born to Buy: The Commercialized Child and the New Consumer Culture* (Scribner, 2004).

- The millennial generation is becoming increasingly prone to compulsive spending. In the United States, 10% of millennials can be classified as clinically compulsive spenders, compared with 5% of Gen X'ers and 1%–3% of baby boomers, according to a Baylor University study.

Implications: In the next 20 years, Europe and Japan can expect to undergo the same revolution in marketing that has replaced America's neighborhood stores with cost-

cutting warehouse operations and "category killers." This will inspire social unrest in countries where farmers and owners of small shops have strong cultural or political positions.

This trend also will spread to China, though it will run several years behind developments in Europe and Japan.

As prices fall to commodity levels and online stores can list virtually every product and brand in their industry without significant overhead, service is the only field left in which marketers on and off the Internet can compete effectively.

Branded items with good reputations are even more important for developing repeat business.

15 The women's equality movement is beginning to lose its significance, thanks largely to past successes.

- Three-fourths of U.S. women ages 25 to 34 participated in the workforce in 2000 compared with a little more than half in 1975, according to BLS.

- Gen X'ers and millennials are virtually gender-blind in the workplace, compared with older generations. This is true even in societies such as India and Japan, which have long been male-dominated, though not yet in conservative Muslim lands.

- Younger generations of women are also more educated. In 2000, 30% of U.S. women ages 25 to 34 had completed four or more years of college, compared with 18% in 1975.

- Fully 57% of American college students are women. Among minorities, the number is even higher: 60% of Hispanic and two-thirds of African-American college students are women.

- Women's increasing entrepreneurialism will allow the formation of entrenched "old girl" networks comparable to the men's relationships that once dominated business.

- Corporations are adding more women to their boards

of directors. In Britain's top 20 firms, 90% now have at least one female director on their boards, reports the U.K. Department of Trade and Industry.

- An infrastructure is evolving that allows women to make more decisions and to exercise political power, especially where both spouses work. One indication of growing dependence on the wife: Life insurance companies are selling more policies to women than to men.

- More women are entering the professions, politics, and the judiciary. As we have seen in Iraq, they also are finding roles as combat soldiers.

Implications: Whatever careers remain relatively closed to women will open wide in the years ahead.

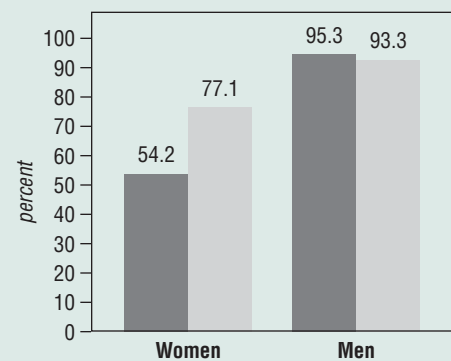
Demand for child care and other family-oriented services will continue to grow, particularly in the United States, where national services have yet to develop. Over the next 20 years, U.S. companies may increasingly follow the example of their counterparts in Europe, whose taxes pay for national day-care programs and other social services the United States lacks.

In the long run, the need to work with female executives from the developed countries will begin to erode

Trend 15

Young Adults in the Labor Force

Labor force participation rates of women aged 25-34 have increased.



1975
2000

Source: U.S. Department of Labor, Bureau of Labor Statistics, *Monthly Labor Review* (March 2002).

the restrictions placed on women's careers in some developing regions.

16 Family structures are becoming more diverse.

- In periods of economic difficulty, children and grandchildren move back in with parents and grandparents to save on living expenses. In the United States, one-third of Gen X'ers have returned home at some point in their early lives.

- Growing numbers of grandparents are raising their grandchildren, because drugs and AIDS have left the middle generation either unable or unavailable to care for their children. This trend is strongest in Africa, where AIDS has orphaned some 12 million children, half between the ages of 10 and 14. In Botswana, Lesotho, Swaziland, and Zimbabwe, more than one in five children will be orphaned by 2010, according to UNICEF. Of these, about 80% will have lost at least one parent to AIDS. In the seven African countries most affected by AIDS, life expectancy at birth has now dropped below 40.

- Among the poor, grandparents also provide live-in day care for the children of single mothers trying to gain an education or build a career.

- Civil unions or marriages between same-sex partners are facing cultural and legal battles in the United States since the issue heated up in 2004, when the Massachusetts Supreme Court ruled that the state's ban on gay marriage was unconstitutional. Germany, the Netherlands, and parts of Canada all have such laws, and similar proposals allowing gay marriage have wide support in Britain.

- Yet the nuclear family also is rebounding, as baby-boom and Gen X parents focus on their children and grandparents retain more independence and mobility.

Implications: Tax and welfare policies need adjustment to cope with families in which heads of households are retired or unable to work.

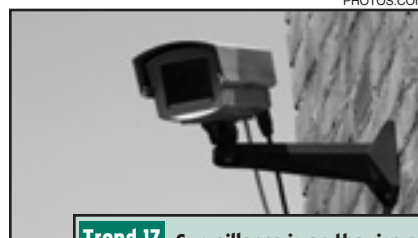
Policies also need to be adjusted for those who receive Social Security and are forced to work to support an extended family.

In the United States, the debates

over homosexuality and the "decline of the family" will remain polarizing issues for the foreseeable future.

17 Privacy, once a defining right for Americans, is dying in many lands.

- Widespread surveillance of private individuals is technically feasible and economically viable, as tiny, powerful cameras now cost next to nothing. Increased surveillance has become socially acceptable



Trend 17 Surveillance is on the rise and privacy is evaporating as more stress is placed on ensuring security and safety.

in an age when many people fear terrorism and crime.

- The USA Patriot Act of 2001 sets aside the constitutional requirement of a search warrant for government officials who wish to search someone's home in order to thwart possible terrorism. Its provisions have been used to justify searches in pursuit of drug dealers and even, in one attempt thus far blocked by the courts, copyright abusers.

- Cell phone conversations are presumed not private, opening them to government eavesdropping at will.

- The contents of most Internet-connected computers are open to virtually unobstructed snooping by anyone with the will to examine them and a minimum of skill. All but the most secure can be invaded by more capable hackers.

- In Britain, roughly 1.5 million surveillance cameras watch over streets, office buildings, schools, and shopping centers, making the United Kingdom one of the most closely monitored nations in the world.

- In the United States, the growth of surveillance also is driven by the fear that lawsuits following a future terrorist attack could claim that failure to install monitoring equipment

constitutes negligence.

Implications: Most surveillance provisions of the USA Patriot Act will be retained, even if the law itself is allowed to expire.

In the absence of a major terrorist event, however, privacy will continue to be considered a right in the United States, and privacy-related lawsuits will likely increase as more people feel violated or inconvenienced by surveillance cameras, such as those used for traffic enforcement.

In large and medium-sized cities around the world, spaces that remain unwatched by video cameras will continue to shrink.

Growing numbers of companies, and even a few private citizens, will encrypt their computer data.

The number of criminal cases based on surveillance data will grow rapidly in countries with the required technological sophistication and infrastructure.

Energy Trends

18 Despite all the calls to develop alternative sources of energy, oil consumption is still rising rapidly.

- The world used only 57 million barrels of oil per day in 1973, when the first major price shock hit. By 2004, it was using nearly 82 million



Trend 18 Oil consumption is continuing to rise. Oil exploration in sensitive areas like the Arctic National Wildlife Refuge will be accompanied by risk-reducing technologies, such as double-walled pipelines.

barrels daily, according to the International Energy Agency. Consumption is expected to reach 110 million barrels daily by 2020.

- However, oil's share of world energy consumption has begun to decline: It is expected to drop from 40% in 1999 to about 37% in 2020.

- The United States consumed 19.7 million barrels of oil daily in 2000, of which 10.4 million barrels came from net imports—up from 6.3 million barrels in net imports in 1973. In 2004, about 55% of the petroleum used in the United States was imported. Domestic oil production is expected to disappear by about 2055, even if reserves are tapped in the Arctic National Wildlife Refuge.

- In the first quarter of 2004, China consumed about 6.14 million barrels of oil, up 18% over the same period in 2003. In February 2004, it imported 3.182 million barrels per day, mostly from the Middle East.

Implications: Low oil prices in the mid- to late-1990s slowed development of fields outside the Middle East. It costs \$10,000 to increase oil production by one barrel per day in most of the world, but only \$5,500 for the OPEC lands.

The latest, relatively sustained increase in oil prices has provided an incentive to develop new fields; at the same time, it has changed American attitudes about the relative importance of energy and the environment. As a result, the long delay in tapping the Arctic National Wildlife Refuge will soon come to an end, and drilling there will begin. However, drilling will be confined to the winter, when the tundra is rock-hard, and will use techniques that make it possible to extract oil with minimal damage to the surroundings. Oil companies are even likely to use costly double-walled pipelines to minimize environmental risks in sensitive areas, much as double-hulled tankers reduce the chance of oil spills at sea.

19 Contrary to popular belief, the world is not about to run out of oil.

- Recent reports that the world's oil reserves may be up to 20% smaller than previously believed are not credible, in part because they



Trend 19 The world is not running out of oil—yet. Oil production has yet to peak in non-OPEC nations such as China, Russia, and Kazakhstan.

originate with an odd coalition of the American Petroleum Institute and alternative-energy proponents—two groups with a vested interest in keeping oil prices high. In any event, 80% of OPEC's estimated supply would still be oil enough to supply the world for the next 64 years.

- As a result of intensive exploration, the world's proven oil reserves climbed steadily since the 1980s, now hovering at over 1 trillion barrels. Natural gas reserves stand at about 5.15 trillion cubic feet.

- OPEC officials claim that the 11 member countries can provide for the world's energy needs for roughly the next 80 years. OPEC currently supplies about 40% of the world's oil and holds 60% of the oil available internationally. It will continue to supply most of the oil used by the developed world. According to the U.S. Department of Energy (DOE), OPEC oil production will nearly double to about 57 million barrels of oil per day by 2020.

- OPEC will continue to supply most of the world's oil, with Russia the second-largest producer. According to the DOE, OPEC oil production will grow by some 24 million barrels of oil per day by 2020, to about 55 million barrels per day. This is nearly two-thirds of the world's total projected increase in production.

- Oil production outside the OPEC nations has not yet peaked. By 2010, China, Russia, and Kazakh-

stan will be major suppliers, if the necessary pipelines can be completed and political uncertainties in Russia and Kazakhstan do not block investment by Western oil companies. Russia is expected to become the world's second-largest oil producer by 2010.

- Exploitation of oil in Venezuela has barely begun. Reserves there may be even larger than those in Saudi Arabia, according to some estimates. However, it is more expensive to refine and use, because it contains much higher levels of sulfur than the Middle Eastern oil currently in production.

- India also is believed to own substantial reserves of oil in deposits beneath the Indian Ocean.

Implications: Higher oil prices should make it cost effective to develop new methods of recovering oil from old wells. Technologies already developed could add nearly 50% to the world's recoverable oil supply.

Alternative energy sources face problems with economic viability. Barring substantial incentives, this will inhibit efforts to stem global warming for the foreseeable future.

There is reason to wonder whether OPEC oil will be available to the United States. Saudi Arabia is likely to be taken over by a fundamentalist Islamic government similar to that of Iran; if, upon the death of King Fahd, Osama bin Laden or one of his deputies seizes power, the new regime could be reluctant to provide oil to the United States.

20 Oil prices are stable around \$35 per barrel when not perturbed by political or economic instability.

- Prices above \$50 per barrel seen in 2004 were an aberration caused by the Iraq war and problems in the Russian oil industry.

- Yet new energy demand from the fast-growing economies of China and India has raised the floor that until 2004 supported oil in the \$25 per barrel range.

- New oil supplies coming on line in the former Soviet Union, China, and other parts of the world will make it even more difficult to sustain prices at artificially high levels. Rus-

sia in particular should become a major producer by 2006.

- The 20 most-industrialized countries all have at least three-month supplies of oil in tankers and underground storage. Most have another three months' worth in "strategic reserves." In times of high oil prices, customer nations can afford to stop buying until the costs come down.

Implications: In response to high (by American standards) gas prices, the U.S. government will probably boost domestic oil production and refining to increase the reserve of gasoline and heating oil. This stockpile would be ready for immediate use in case of future price hikes. This will make it easier to negotiate with OPEC.

The United States almost certainly will drill for oil in the Arctic National Wildlife Refuge, though efforts will be made to minimize environmental damage.

21 Growing competition from other energy sources also will help to limit the price of oil.

- Nuclear plants will supply 16% of the energy in Russia and eastern Europe by 2010. In early 2004, China had only nine operating nuclear power plants. It plans to build 30 more by 2020, bringing nuclear energy consumption from 16 billion kWh in 2000 to 142 billion kWh in 2020. By 2020, Russia will consume 129 billion kWh of nuclear energy per year, while Canada will use 118 billion kWh.

- Solar, geothermal, wind, and wave energy will ease power prob-

lems where these resources are most readily available, though they will supply only a very small fraction of the world's energy in the foreseeable future.

- Nuclear electric output is growing, while hydroelectric power generation has been declining since its 1996 peak of 727.62 billion kWh.

- Global energy production from renewable sources such as geothermal wells, wind turbines, and solar generators grew by 80.7% between 1990 and 2002.

- Worldwide wind-power generating capacity grew by 6,500 megawatts in 2001 alone, the fastest rate of growth yet recorded and 50% more than the previous year. Photovoltaic solar energy production has been growing at a steady 25% per year since 1980.

- Natural gas burns cleanly, and there is enough of it available to supply the world's total energy demand for the next 200 years. Consumption of natural gas is growing by 3.3% annually, compared with 1.8% for oil.

- According to the DOE's Energy Information Agency, shifting 20% of America's energy supply to renewable resources by 2020 would have almost no impact on the total cost of power. At present, less than 5% of the energy used in the United States comes from renewable resources.

Implications: Though oil will remain the world's most important energy resource for years to come, two or three decades forward it should be less of a choke point in the global economy.

Declining reliance on oil eventually could help to reduce air and water pollution, at least in the developed world. By 2060, a costly but pollution-free hydrogen economy may at last become practical.

Nuclear power will supply a growing portion of the world's energy needs. A new technique called muon-catalyzed fusion reportedly could produce commercially useful quantities of energy by 2020.

Environmental Trends

22 People around the world are becoming increasingly sensitive to environmental issues such as air pollution, as the consequences of neglect, indifference, and ignorance become ever more apparent.

- The health impacts of pollution are well established. In the United States alone, medical researchers estimate that some 64,000 people each year die from cardiopulmonary disease as a result of breathing particulates. In sub-Saharan Africa, the toll is between 300,000 and 500,000 deaths per year. Pollution-related respiratory diseases kill about 1.4 million people yearly in China and Southeast Asia.

- A 2004 report for the U.S. Environmental Protection Administration (EPA) estimated that pollution by American power plants causes 23,600 needless deaths per year.

- In all, the World Health Organization estimates that 3 million people die each year from the effects of air pollution, about 5% of the total deaths annually.

- The European Parliament estimates that 70% of the Continent's drinking water contains dangerous concentrations of nitrate pollution. In the United States, there is growing concern that pollutants such as perchlorate, the gasoline additive MTBE, and even the chlorine used to kill waterborne pathogens may represent significant health concerns.

- Though some debate remains about the cause, the fact of global warming has become undeniable. At Palmer Station on Anvers Island, Antarctica, for example, the average annual temperature has risen by 3°C–4°C since the 1940s, and by an amazing 7°C–9°C in June—early winter in that hemisphere. Recent analyses say there is a 90% chance that the planet's average annual temperature will rise between 3°C and 9°C over the next century.

- Governments are taking more active measures to protect the environment. For instance, after years of ineffective gestures, Costa Rica has incorporated about 25% of its land into protected areas, such as national parks. Cambodia has protected a



Trend 21 Solar and renewable resources are becoming more competitive with oil. Pictured is a solar dish-engine system (artist's concept) under development by Sandia National Laboratories and Stirling Energy Systems Inc.



Trend 22 Pollution plagues the streets of Addis Ababa, Ethiopia, as well as many other places, creating growing awareness of the health impacts of environmental problems.

million-acre forest. Gabon has set aside 10% of its land for parks. Liberia is protecting 155,000 acres of forest in an effort to safeguard endangered western chimpanzees. In 1999, Brazil raised the maximum fine for illegal logging.

- In an effort to promote cleaner energy technologies and to slow global warming, most European nations now tax carbon emissions on fossil fuels. In Germany, a carbon tax raises the cost of gasoline by nearly 11¢ per gallon.

- In India, government policies consistently rate industrial development more important than the environment. Yet in an effort to reduce air pollution, India's Supreme Court has limited sales of new cars in New Delhi to 18,000 per year, less than one-fourth of the average previously sold.

- Nonetheless, none of India's 23 cities with million-plus populations meets WHO air-quality standards. Indoor smoke from cooking fires kills an estimated 500,000 people in India each year, mostly women and children.

- Anticipating a three-foot rise in sea levels, the Netherlands is spending \$1 billion to build new dikes.

Implications: If air pollution were halted instantly, it would take an estimated 200 years for carbon dioxide and other greenhouse gases to return to preindustrial levels.

Environmental policies will provoke a political backlash wherever they conflict with entrenched interests, as they have long done in the U.S. West. However, the cost of not

protecting the environment is too obvious to be ignored. Throughout most of the world, polluters and private beneficiaries of public assets will increasingly confront restrictive regulations designed to serve the interests of the community at large.

23 Water shortages will be a continuing problem for much of the world.

- By 2040, at least 3.5 billion people will run short of water, almost 10 times as many as in 1995. By 2050, fully two-thirds of the world's population could be living in regions with chronic, widespread shortages of water.

- Contaminated water is implicated in 80% of the world's health problems. An estimated 40,000 people around the world die each day of diseases directly caused by contaminated water—that's more than 14 million per year.

- One-third of the population of Africa and most of the major cities in the developing world will face water shortages, according to the United Nations.

- The northern half of China, home to perhaps half a billion people, already is short of water. The water table under Beijing has fallen nearly 200 feet since 1965.

- Water usage is causing other problems as well. For example, irrigation water evaporates, leaving minerals in the soil. By 2020, 30% of the world's arable land will be salty; by 2050, 50%. Salinization already is cutting crop yields in India, Pakistan, Egypt, Mexico, Australia, and parts of the United States.

- Pollution further reduces the supply of safe drinking water. In India, an estimated 300 million people lack access to safe drinking water, due to widespread pollution of rivers and groundwater.

- Water quality is a growing problem even in the developed lands. In

the United States, cities such as Atlanta, where the delivery system is a century old and poorly maintained, suffer frequent water-main breaks, which suck dirt, debris, bacteria, and pollutants into the water supply.

- Many ecologists believe that global warming will make drought in the United States much more frequent—even the norm—west of the Mississippi River.

Implications: Such problems as periodic famine and desertification can be expected to grow more frequent and severe in coming decades.

Water wars, predicted for more than a decade, are an imminent threat in places like Kashmir: Much of Pakistan's supply comes from areas of Kashmir now controlled by India.

Other present and future water conflicts involve Turkey, Syria, and Iraq over the Tigris and Euphrates; Israel, Jordan, Syria, and Palestine over water from the Jordan River and the aquifers under the Golan Heights; India and Bangladesh, over the Ganges and Brahmaputra; China, Indochina, and Thailand, over the Mekong; Kyrgyzstan, Tajikistan, and Uzbekistan over the Oxus and Jaxartes rivers; and Ethiopia, Sudan, and at least six East African countries, including Egypt, which share the Nile.

Impurities in water will become an even greater problem as the population ages and becomes more susceptible to infectious diseases.

In the United States, repair of decayed water systems is likely to be a major priority for older cities such as New York, Boston, and Atlanta. Cost estimates for necessary replacement and repair of water mains range up to \$1 trillion.

Water providers in the United States will face more new regulations in the next five years than have been adopted since the Safe Drinking Water Act was signed in 1974.

24 Recycling has delayed the "garbage glut" that threatened to overflow the world's landfills, but the threat has not passed simply because it has not yet arrived.

- Americans now produce about 4.4 pounds of trash per person per

day, twice as much as they threw away a generation ago.

- In June 2002, New York City abandoned its 14-year-old recycling effort for glass, plastic, and beverage cartons, which city authorities held was not cost-effective. This cut recycling from about 21% of waste to an estimated 10% and sent an extra 1,200 tons of litter to landfills each day. By contrast, Seattle recycles about half of its solid waste.

- Seventy percent of U.S. landfills will be full by 2025, according to the EPA.

- In London and the surrounding region, landfills will run out of room by 2012. For household trash, landfill space will be exhausted by 2007.

- In some other regions, simply collecting the trash is a major problem. Brazil produces an estimated 240,000 tons of garbage daily, but only 70% reaches landfills. The rest accumulates in city streets, where it helps to spread disease.

- Recycling and waste-to-energy plants are a viable alternative to simply dumping garbage. The United States has more than 2,200 landfills. Europe, where recycling and energy conversion are much more common, gets by with 175.

Implications: Expect a wave of new regulations, recycling, waste-to-energy projects, and waste management programs in an effort to stem the tide of trash. It will, of course, begin in California, a jurisdiction often cited by policy forecasters as a bellwether of change.

Existing regulations will be tightened and disposal prices raised in Pennsylvania, South Carolina, Louisiana, and other places that accept much of the trash from major garbage producers such as New York.

25 Industrial development trumps environmental concerns in many parts of the world.

- Respondents to a survey in India ranked environmental degradation next to last among 10 issues listed as significant problems facing the country, despite rampant deforestation, widespread air and water pollution, loss of biodiversity, and many other such problems.



Trend 26 Species loss is now 1,000 times the natural rate of extinction. Here, a great Indian adjutant stork witnesses destruction of its habitat in Guwahati City.

- In South Africa, distrust of many environmental regulations stems from years of apartheid-era restrictions that were often justified as environmental measures, according to a study of environmental business opportunities by Industry Canada.

- Some 70% of the energy used in China comes from coal-burning power plants, few of which are equipped with pollution controls. Scientists estimate that by 2025 China will emit more carbon dioxide and sulfur dioxide than the United States, Japan, and Canada combined.

- Acid rain like that afflicting the United States and Canada will appear wherever designers of new power plants and factories neglect emission controls. In India, an area the size of the United States is covered by a haze of sulfates and other chemicals associated with acid rain. Look for this problem to appear in most other industrializing countries as well.

Implications: Broad regions of the planet will be subject to pollution, deforestation, and other environmental ills in the coming decades.

Diseases related to air and water pollution will spread dramatically in the years ahead. Already, chronic obstructive pulmonary disease is five times more common in China than in the United States. As citizens of the developing countries grow to expect modern health care, this will create a growing burden on their economies.

This is just a taste of future problems, and perhaps not the most troublesome. Even the U.S. government now admits that global warm-

ing is a result of human activities that produce greenhouse gases. It now seems that China and India soon will produce even more of them than the major industrialized nations. Helping the developing lands to raise their standards of living without causing wholesale pollution will require much more aid and diplomacy

than the developed world has ever been willing to devote to this cause.

26 Though species extinction may not be so rapid as once believed, loss of biodiversity will be a growing worry for decades to come.

- By 2100, as many as half of all species could disappear.

- Some 15,589 species are now listed as threatened (7,266 animal species and 8,323 plant and lichen species), according to the 2004 Red List of the International Union for Conservation of Nature and Natural Resources. This is an increase of 3,330 over the 2003 Red List.

- Just 25 so-called "hot spots" covering 11% of the world's surface have lost 70% of their original vegetation. What is left, about 2% of the planet's surface, is home to 44% of all plant species and 35% of all vertebrates other than fish. The hot spots also are home to 1.2 billion people, or one-fifth of the world's population.

- An estimated 50,000 species disappear each year, up to 1,000 times the natural rate of extinction, according to the United Nations Environmental Program.

- Eleven percent of birds, 25% of mammals, and 20% to 30% of all plants are estimated to be nearing extinction.

- The chief cause for species loss, according to University of Colorado scientists, is the destruction of natural habitats by logging, agriculture, and urbanization. Some 30 million acres of rain forest are destroyed each year.

- Amphibian populations are in decline throughout the world, for reasons that remain poorly understood.

- Coral reefs throughout the world are dying rapidly. For instance, Caribbean reefs have lost 80% of their coral cover in the past three decades. Among the suspected culprits are overfishing, pollution, and global warming.

- Though commercial fishing is not known to have exterminated any species—largely because the last few members of a species are too costly to catch—it is turning out to be another important cause of species depletion. Stocks of cod, tuna, swordfish, marlin, and sharks are down 90% since modern industrialized fishing got its start 40 years ago.

Implications: Species loss has a powerful negative impact on human well-being. Half of all drugs used in medicine are derived from natural sources, including 55 of the top 100 drugs prescribed in the United States. About 40% of all pharmaceuticals are derived from the sap of vascular plants. So far, only 2% of the 300,000 known sap-containing plants have been assayed for potential drugs.

In Indonesia, home to one-eighth of the world's coral reefs, more than 70% of the reefs are dead or dying. The Indonesian economy loses an estimated \$500,000 to \$800,000 annually per square mile of dead or damaged reef.

Diverse ecosystems absorb more carbon dioxide than those with fewer species. Loss of biodiversity thus is a potential cause of global warming.

27 Continuing urbanization will aggravate most environmental and social problems.

- Forty-eight percent of the world's population currently lives in cities, according to the Population Reference Bureau's 2004 *World Population Data Sheet*. By 2030, that figure will grow to 60%, as some 2.1 billion people are added to the world's cities.

- More than three-fourths of the population in developed countries live in cities. In North America, urbanization is the highest, at 79%. But

cities are growing fastest in the developing world.

- The big are getting bigger. In 1950, there were just eight megacities, with populations exceeding 5 million, in the world. By 2015, there will be 59 megacities, 48 of them in less-developed countries. Of these, 23 will have populations over 10 million, all but four in the developing lands.

- Natural increase now accounts for more than half of population increase in the cities; at most, little more than one-third of urban growth results from migration.

- Up to 1 billion city dwellers lack adequate shelter, clean water, toilets, or electricity. The United Nations estimates that these problems cause 10 million needless deaths annually.

- Fuels burned in cities account for 75% of global carbon emissions from human activity, according to the Worldwatch Institute.

- NASA scientists point out that urbanization also tends to put buildings and blacktop on the most fertile land, eliminating significant quantities of carbon-absorbing plants.



Trend 27 Urbanization continues to aggravate environmental problems, especially in developing nations that are less able to solve them. Shown here is a busy street in Chennai, India.

- Urbanization also deprives surrounding areas of water: Instead of sinking into the ground, rain is collected, piped to the city, used, treated as gray water, and then discarded into the ocean. In some regions, such as near Atlanta, water levels in local aquifers are declining rapidly because the water that once replenished them now is lost.

- The United States is the one major counter-example to the global urbanization trend. This automobile-reliant society built one of the best highway systems in the world and has relatively little mass transit, so more Americans live in the suburbs than in the cities.

Implications: Cities' contribution to global warming can only increase in the years ahead.

As the world's supply of potable water declines, people are concentrating in those areas where it is hardest to obtain and is used least efficiently.

Deaths due to shortages of shelter, water, and sanitation can only grow. Epidemics will become still more common as overcrowding spreads HIV and other communicable diseases more rapidly.

Since the growth is now due more to natural increase than to migration, programs designed to encourage rural populations to remain in the countryside may be misplaced. Education and family planning seem more likely to rein in the growth of cities.

Trend 27

Urban Populations Worldwide

Percentage of population living in cities:

World: 48

More-developed countries: 76

Less-developed countries: 35

Africa: 35

North America: 79

Latin America/Caribbean: 75

Asia: 39

Europe: 74

Source: Population Reference Bureau, 2004 *World Population Data Sheet*

Technology Trends

28 Technology increasingly dominates both the economy and society.

- New technologies are surpassing the previous state of the art in all fields, and technological obsolescence is accelerating.

- Computers are fast becoming part of our environment, rather than just tools we use for specific tasks. With wireless modems, portable computers give us access to networked data wherever we go.

- Robots are taking over more and more jobs that are routine, remote, or risky, such as repairing undersea cables or space-station components. Flexible, general-service personal robots will appear in the home by 2010, expanding on the capabilities of devices such as robotic vacuum cleaners and lawn mowers.

- Wireless connections simplify relocation of personnel, minimize delays in completing new installations, and let terminals travel with the user instead of forcing the user to seek out the terminal.

- By 2010, artificial intelligence, data mining, and virtual reality will help most companies and government agencies to assimilate data and solve problems beyond the range of today's computers. AI applications include robotics, machine vision, voice recognition, speech synthesis, electronic data processing, health and human services, administration, and airline pilot assistance.

- Superconductors operating at economically viable temperatures will be in commercial use soon after 2015.

Implications: New technologies should continue to improve the efficiency of many industries, helping to keep costs under control. However, this increased productivity retarded U.S. job creation from 2002 through early 2004. Other developed countries are likely to feel the same effect in the future.

New technologies often require a higher level of education and training to use them effectively. They also provide dozens of new opportunities to create businesses and jobs.

Automation will continue to cut



Trend 28 Computers are fast becoming part of our environment and dominating the economy and society in the process.

the cost of many services and products, making it possible to reduce prices while still improving profits. This will be critical to business survival as the Internet continues to push the price of many products to the commodity level.

New technology also will make it easier for industry to minimize and capture its effluent. This will be a crucial ability in the environmentally conscious future.

29 Research and development will play a growing role in the economy.

- Total U.S. federal outlays on R&D have grown steadily in the past three decades. Projected R&D spending in fiscal year 2005 represents 1.1% of GDP, the same proportion as in 1990 but greater than in 2000 (0.7%).

- R&D outlays in Japan have risen almost continuously, to nearly 3% of GDP.

- China has taken third place in the world's R&D spending, with a budget totaling about \$60 billion in 2001, the most recent year for which the figure is available. The United States spent \$282 billion on research that year, while Japan spent \$104 billion. Germany, in fourth place, spent \$54 billion.

- R&D spending in the European

Union is just under 2% of GDP. In individual countries, it ranges from 4.27% of GDP in Sweden to just 1.8% in Britain, where it has declined steadily for more than 10 years.

- In Russia, R&D budgets fell from about 2% of GDP in 1990 to under 1% in 1997; they are believed to have recovered to about 1.1% by 2003.

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Trend 29 Research and development investments will continue to have important impacts on the global economy.

- In the United States, federal funding for basic research has dwindled, as Washington focuses on military research and engineering.

- Corporate R&D in the United States also has shifted in the post-September 11 period, with less emphasis on pharmaceuticals and computer-related fields and more focus on biotechnology, nanotechnology, and security technologies.

- Western corporations are beginning to outsource R&D to foreign contractors, just as they do other functions. Russian laboratories, which are technologically sophisticated but have been hard-pressed to survive budget cuts for more than a decade, are taking on much of this work.

- U.S. jobs created by high-tech exports are more than replacing the low-tech jobs lost to competition under the North American Free Trade Agreement and similar agreements.

Implications: The demand for scientists, engineers, and technicians will continue to grow, particularly in fields where research promises an immediate business payoff.

Low-wage countries such as China will continue to take jobs from advanced industrialized countries such as the United States, but those jobs will be replaced by higher-paid jobs in technology and service industries.

Countries like India, China, and Russia may continue to suffer a brain drain as those with high-tech skills emigrate to high-demand, high-wage destinations. However, there is evidence that growing numbers of technology students and professionals are spending time in the West to learn cutting-edge skills, and then returning to their native lands to work, start companies, and teach. This trend may promote the growth of some developing countries while reducing the competitive advantages of the developed world.

By inhibiting stem-cell research, the United States has made itself a less attractive place for cutting-edge biomedical scientists. The United Kingdom is capitalizing on this to become the world's leader in stem-cell research. In the process, it is reversing the brain drain that once deprived it of top scientists.

Washington's neglect of basic sci-

ence is being felt in the declining fraction of patents, Nobel Prizes, and other awards going to American scientists. As other countries become more skilled in critical high-tech fields, the United States is fast losing its edge. If this trend is not reversed, it will begin to undermine the U.S. economy and shift both economic and political power to other lands.

30 Advances in transportation technology will make travel and shipping faster, cheaper, and safer, by land, sea, and air.

- NASA's X-43A Scramjet, an experimental hypersonic aircraft, successfully flew at 7,000 mph (nearly 10 times the speed of sound) in November 2004. Once commercialized, such technology could whisk diplomats and other high-priority passengers across continents in less time than it takes most people to drive to the airport.

- By 2010, New York, Tokyo, and Frankfurt will emerge as transfer points for passengers of high-speed, large-capacity supersonic planes.

- Airline crashes will decline, and will involve fewer fatalities, thanks to such technical advances as safer seat design and flash-resistant fuels.

- Following European practice, the U.S. airline industry will begin to replace the spokes of its existing hub-and-spokes system with high-speed trains for journeys of 100 to 150 miles.

- Advances in automobile technology such as road-condition sensors, continuously variable transmissions, automated traffic management systems, night-vision systems, and smart seats that tailor airbag inflation to the passenger's weight will all be in common use by 2010.

- The first commercial hybrid gas-electric cars are available already. New models will begin to win market share from traditional gas guzzlers between 2005 and 2010.

- To reduce the number and severity of traffic accidents, trucks on the most heavily used highways will be exiled to car-free lanes, and the separation will be enforced.

Implications: One of the fastest-growing transport industries is trucking, in part because computers encourage just-in-time inventory management. Deliveries for Internet-based companies are an expanding market for shipping. This field will grow more efficient as GPS-based truck tracking and other new technologies spread through the industry.

More-efficient vehicles, especially with hybrid power trains, should begin to reduce the demand for oil by 2008, easing one of the few remaining sources of inflation.

By 2010, smart-car technologies will begin to reduce deaths due to auto accidents in Europe and, slightly later, the United States.

Cities increasingly will struggle to reduce auto congestion, either by



Trend 30 NASA's X-43A Scramjet breaks speed record. Transportation technologies will move people and cargo faster and farther than ever.

limiting the use of private automobiles—as in Munich, Vienna, and Mexico City—or by encouraging the development and use of mass transit, as in Copenhagen and Curitiba, Brazil.

Technology may offer other alternatives. One proposal is “dualmode transportation,” in which private cars would be used normally on short hauls but would run on automated guideways for long-distance travel.

31 The pace of technological change accelerates with each new generation of discoveries and applications.

- The design and marketing cycle—idea, invention, innovation, imitation—is shrinking steadily. Thus, products must capture their market quickly, before the competition can copy them. As late as the 1940s, the product cycle stretched to 30 or 40 years. Today, it seldom lasts 30 to 40 weeks.

- Computer-aided design in the automobile and other industries shortens the lag time between idea and finished design.

- Eighty percent of the scientists, engineers, and doctors who ever lived are alive today—and exchanging ideas in real time on the Internet.

- All the technical knowledge we work with today will represent only 1% of the knowledge that will be available in 2050.

Implications: Industries will face much tighter competition based on new technologies. Those who adopt state-of-the-art methods first will prosper. Those who ignore them eventually will fail.

Lifelong learning is a necessity for anyone who works in a technical field—and for growing numbers who do not.

32 Important medical advances will continue to appear almost daily.

- Genetic research has accelerated advances in medicine and in the growth of medical knowledge. Early results stemming from the Human Genome Project include possible cures for hemophilia, cystic fibrosis, familial hypercholesterolemia, a number of cancers, and AIDS. Even-

tually, some 4,000 hereditary disorders may be prevented or cured through genetic intervention.

- Our growing knowledge of biochemistry, aided by advanced computer modeling, has made it possible to design drugs to fit specific receptors in the cell. Drugs created through this technology often are much more effective than natural derivatives.

- New research on artificial blood shows promise for stretching the supply of blood, which is expected to fall short of demand by 4 million units per year for the next 30 years.

- Memory-enhancing drugs should reach clinical use by 2010.

- “Magic bullet” drug-delivery systems will make it possible to direct enormous doses of medication exactly where they are needed, sparing the rest of the body from possible side effects. This will improve therapeutic results in cancers and many other conditions that require the use of powerful drugs.

- Brain-cell and nerve-tissue transplants to aid victims of retardation, head trauma, and other neurological disorders will enter clinical use by 2007. Heart repairs using muscles from other parts of the body will arrive soon after. Transplanted animal organs will find their way into common use. Laboratory-grown bone, muscle, and blood cells also will be employed in transplants.

- Other transplanted tissues will come from cloning and related technologies used to grow stem cells. Radical new treatments for diabetes, Parkinson’s disease, perhaps Alzheimer’s, and many other disorders can be expected to arrive within the next five to 10 years. Forecasting International believes that cloning and related methods will be accepted for the treatment of disease.

- Surgeons working via the Internet will routinely operate on patients in remote areas, using robot manipulators.

- In the next 10 years, we expect



Trend 32 Medical advances will continue emerging almost daily thanks to genetic research and assistance from computer modeling.

to see more and better bionic limbs, hearts, and other organs; drugs that prevent disease rather than merely treating symptoms; and body monitors that warn of impending trouble. These all will reduce hospital stays.

- By 2025, the first nanotechnology-based medical therapies should reach clinical use. Microscopic machines will monitor our internal processes, remove cholesterol plaques from artery walls, and destroy cancer cells before they have a chance to form a tumor.

Implications: Even without dramatic advances in life extension, baby boomers are likely to live much longer, and in better health, than anyone now expects. This will reduce the cost of health care well below most current projections, but is likely to raise dramatically the cost of Social Security, Medicare, and the few remaining fixed-benefit pension plans.

High development and production costs for designer pharmaceuticals, computerized monitors, and artificial organs will continue to push up

the cost of health care far more rapidly than the general inflation rate. Much of these expenses will be passed on to Medicare and other third-party payers.

Severe personnel shortages can be expected in high-tech medical specialties, in addition to the continuing deficit of nurses.

A growing movement to remove barriers to stem-cell research in the United States could speed progress in this critical field. This could be expected to produce new treatments for neurological disorders such as Parkinson's and Alzheimer's diseases and many other illnesses now incurable or untreatable.

33 The Internet is growing, both logarithmically and geographically.

- In spring 2004, Internet users numbered around 945 million worldwide, exceeding forecasts.

- In the United States, more than 185 million people have Internet connections, while nearly 137 million are active users.

- The world's population of Internet users is expected to grow to 1.35 billion by 2007.

- One reason for this fast growth is the rapid expansion of Internet connectivity in some developing lands. India had only 170,000 Internet subscribers in 1998; by 2004, it had 39 million, more than half

again as many as had been predicted just two years earlier.

- In late 2004, China's population of Internet users amounted to just under 100 million.

- More than 80% of Japanese households were online by early 2003. A year later, more than 78 million people—over 60% of Japan's population—had access to the Internet via computers, cell phones, and other devices.

- American consumers are finally adopting broadband. Some 8.3 million homes and businesses signed up for broadband service in 2003, bringing the total to 28.2 million lines. By late 2004, about 63 million people, some 51% of all home Internet users, had broadband at home.

- Most Internet communication is commercial, business-to-business, rather than personal e-mail.

- Internet-based commerce is growing rapidly. Total e-commerce revenue is expected to be about \$2.7 trillion in 2004, \$1 trillion in the United States alone. Business-to-business sales passed \$1 trillion by the end of 2003. Online retail sales in the United States grew by 51% in 2003 and were expected to grow another 27% in 2004.

- Not long ago, the Internet was predominately English-speaking. By 2004, there were an estimated 280 million Internet users in countries where English is the dominant language, but 680 million in non-English-speaking countries.

- Americans made up 42% of the total Internet-using population in 2000, dropping to less than 20% in May 2004.

Implications: B2B sales on the Internet are dramatically reducing business expenses throughout the Internet-connected world, while giving suppliers access to customers they could never have reached by traditional means.

Internet-based operations require more sophisticated, knowledgeable workers. People with the right technical training will find a ready market for their services for at least the next 15 years, as major businesses compete to hire them. However, the specialties required in any given country will change as some skills are outsourced abroad.

Cultural, political, and social isolation has become almost impossible for countries interested in economic development. Even China's attempts to filter the Internet and shield its population from outside influences have proved relatively ineffective, as hackers elsewhere provide ways to penetrate the barriers.

However, isolationism is still possible for those who are not concerned with trade. The number of Internet users in Iran has fallen from an estimated 1 million to about 420,000 since the mullahs shut down the country's cybercafes.

Trends in Labor Force and Work

34 Education and training are expanding throughout society.

- Approximately 130,000 additional K-12 teachers will be needed in the United States between 2000 and 2010, according to the National Center for Educational Statistics.

- Also needed: An annual \$10 billion increase in federal spending for programs such as Head Start, aid for disadvantaged children, the Job Corps, and the Job Training Partnership Act.

- Starting salaries for teachers (as a ratio of per capita GDP) declined throughout the 1990s in most countries of the Organization for Economic Cooperation and Development (OECD); exceptions were the Netherlands and New Zealand.

- Knowledge turnover in the professions is a growing challenge that will require continuous retraining and lifelong learning. The half-life of an engineer's knowledge today is only five years; in 10 years, 90% of what an engineer knows will be available on the computer. In electronics, fully half of what a student learns as a freshman is obsolete by his senior year.

- Rapid changes in the job market and work-related technologies will necessitate increased training for virtually every worker.

- In the next 10 years, close to 10 million jobs will open up for professionals, executives, and technicians in the highly skilled service occupations.



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Trend 33 The Internet is growing and connecting ever greater numbers of people—both to each other and to new sources of information.



Trend 34 Education and training are expanding because workers need to keep up with a constantly growing knowledge base in their professions.

- A substantial portion of the labor force will be in job retraining programs at any moment. Much of this will be carried out by current employers, who have come to view employee training as a good investment.

- Schools will train both children and adults around the clock. The academic day will stretch to seven hours for children; adults will use much of their remaining free time to prepare for their next job.

- We already are seeing a trend toward more adult education. One reason is the need to train for new careers as old ones are displaced or boomers grow bored with them. The other is the need of healthy, energetic people to keep active during retirement.

- In the United States, education is moving rapidly to the Internet, as small, rural grammar and high schools supplement their curricula with material from larger institutions, while universities increasingly market their programs to distant students.

Implications: Even small businesses must learn to see employee training as an investment rather than an expense. Motorola estimates that it reaps \$30 in profits for each dollar it spends on training.

Both management and employees must get used to the idea of lifelong learning. It will become a significant

part of work life at all levels.

As the digital divide is erased and minority and low-income households buy computers and log onto the Internet, groups now disadvantaged will be increasingly able to educate and train themselves for high-tech careers.

35 Specialization is spreading throughout industry and the professions.

- For doctors, lawyers, engineers, and other professionals, the size of the body of knowledge required to excel in any one area precludes excellence across all areas.

- The same principle applies to artisans. Witness the rise of post-and-beam homebuilders, old-house restorers, automobile electronics technicians, and mechanics trained to work on only one brand of car.

- The information-based organization depends on its teams of task-focused specialists.

- Globalization of the economy calls for the more independent specialists. For hundreds of tasks, corporations will turn to consultants and contractors who specialize more and more narrowly as markets globalize and technologies differentiate.

Implications: This trend creates endless new niche markets to be

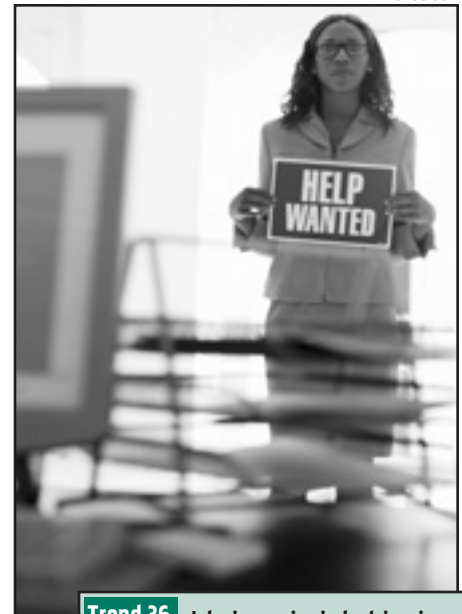
served by small businesses. It also brings more career choices, as old specialties quickly become obsolete, but new ones appear even more rapidly.

36 Services are the fastest-growing sector of the global economy.

- Retail sales in the United States grew by about 12% between 1999 and 2002, according to the Census Bureau, while revenues in selected service industries rose by 14.4%. Similar trends are seen in other industrialized countries.

- Service industries accounted for 83% of private nonfarm employment in the United States in 2000, the most recent year for which figures are available, up from only 70% in 1990. In the decade ending 2010, services are expected to account for virtually the entire net gain in U.S. employment.

- Service jobs have replaced many of the well-paid positions lost in manufacturing, transportation, and agriculture. These new jobs, often part time, pay half the wages of manufacturing jobs. On the other hand, computer-related service jobs pay much more than the minimum—for workers with sound education and training.



Trend 36 Jobs in service industries, including computer-related services, will see continued fast growth.

- Some of the fastest growth is in some of the least-skilled occupations, such as cashiers and retail salespersons.

Implications: Services are now beginning to compete globally, just as manufacturing industries have done over the last 20 years. By creating competitive pressure on wages in the industrialized lands, this trend will help to keep inflation in check.

The growth of international business will act as a stabilizing force in world affairs, as most countries find that conflict is unacceptably hard on the bottom line.

37 Women's salaries are approaching equality with men's—but very slowly.

- Internationally, women's average hourly pay was 81.8% of men's in 2004, up from 80.6% in 2003.

- Women's salaries in the United States have been rising faster than men's since 1975. However, there still is a long way to go. Average earnings for a man employed full time and year-round reported in the 2000 Census was about \$38,000, or \$10,000 more than for a woman working a comparable job. Female doctors make only 58% as much as their male colleagues.

- In Great Britain, the gender pay gap narrowed to record levels in 2004, as women's wages reached

85.7% of men's, according to U.K. National Statistics.

- Women's salaries have reached parity with men's in only five fields, nearly all of them areas where women have broken into trades long dominated by men: hazardous material removal workers, telecommunications line installers and repairers, meeting and convention planners, dining room or cafeteria workers, and construction trade helpers.

- However, women's average income could exceed men's within a generation. College graduates enjoy a significant advantage in earnings over peers whose education ended with high school. Today, some 64% of young American women enroll in college, compared with only 60% of young men.

- To the extent that experience translates as prestige and corporate value, older women should find it easier to reach upper-management positions. This will blaze the trail and help raise the pay scale for women still climbing the corporate ladder.

Implications: The fact that women's salaries are lagging despite higher academic achievement than men suggests that many college-educated women may be underemployed.

More new hires will be women, and they will expect both pay and opportunities equal to those of men.

Competition for top executive positions, once effectively limited to men, will intensify even as the corporate ladder loses many of its rungs.

The glass ceiling has been broken. One-fourth of upper executives today, and nearly 20% of corporate board members, are women. While this is still too few, it is far more than in any previous generation, and their numbers can only grow. Look for more women to reach decision-making levels in business and government.

38 Workers are retiring later as life expectancy stretches.

- OECD data show that people are retiring earlier in the developed world, but this is only part of the picture. Americans, for instance, often return to work and delay complete retirement for several years. This trend will spread to other industrialized countries as the retirement-age population grows and the number of active workers to support them declines.

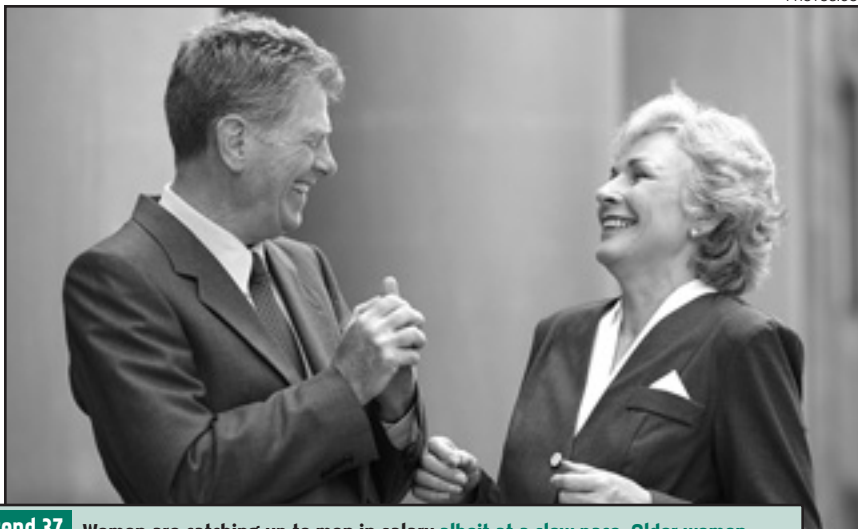
- People increasingly will work at one career, "retire" for a while (perhaps to travel) when they can afford it, return to school, begin another career, and so on in endless variations. True retirement, a permanent end to work, will be delayed until very late in life.

- By 2010, we expect the average retirement age in the United States to be delayed well into the 70s. Benefits may also continue their decline, and they will be given based on need, rather than as an entitlement.

Implications: Since the penalty on earnings of Social Security recipients was rescinded, more American retirees will return to work, and those not yet retired will be more likely to remain on the job.

Even though the Social Security program has been the "third rail" of American politics, within five years, the retirement age will be moved back at least to 70 for early retirement and full benefits at 72.

Older workers will partially make up for shortages of entry-level employees. The chance to remain in the workplace will reduce the risk of poverty for many elderly people



Trend 37 Women are catching up to men in salary albeit at a slow pace. Older women, whose experience will be increasingly valuable to corporations, may find it easier to reach upper-management positions in the future.

who otherwise would have had to depend on Social Security to get by.

Retirees will act as technical aides to teachers, especially in the sciences.

In the long run, it may prove impossible to maintain the tradition of retirement, except through personal savings and investment.

39 Labor unions are losing their power to secure rights for workers and to shape public policy in regard to workplace issues.

• Union membership has been falling for the past two decades. In the United States, unions enrolled 23% of employed wage and salary workers in 1980, but only 13% by 2003. Forecasting International projects further declines in the near-term future, to below 12%, despite several recent successes in organizing, contract negotiations, and strikes.

• Public-sector workers in the United States are more likely to be unionized than private-sector employees. Membership is high among workers in education (37.7%) and protective services (36.1%). Sales and office occupations have the lowest union-membership rates (8.2%), according to the U.S. Bureau of Labor Statistics (BLS).

• In South Korea, where organized labor once was invincible, the government has increasingly stood up to strikes by doctors, electrical workers, car makers, and other trade groups.

• In Britain, where the Thatcher government broke union power in the 1980s, labor has yet to recover its former strength. Union membership has flattened out after falling steadily. Still, unions cover a higher proportion of British workers (26.6%) than U.S. workers, according to the U.K. Labour Force Survey.

• One reason for this decline is that companies are freely seeking and finding nonunionized workers around the world. They also contract out a growing proportion of business activities to nonunion firms.

• Increased automation can cut a company's workforce by up to one-third. The surviving workers tend to be technicians and other comparatively well-educated semiprofession-

als, who always have tended to resist union membership. The growing industrial use of artificial intelligence will further this trend.

Implications: For large companies, this trend promises greater stability in employee wages and benefits.

Unions eager to regain their membership will target any substantial company with less-skilled employees to organize. This could raise labor costs for companies that unions once would have considered too small to organize.

In 10 to 15 years, American labor unions will compete with AARP to lead the battle for the rights of late-life workers and for secure retirement benefits. They face an inherent conflict between the interests of workers in what once would have been the retirement years and those of younger members, who rightly see the elderly as having saddled them with the cost of whatever benefits older generations enjoy.

Unions' political strength is also diminishing and is increasingly being surpassed by powerful blocs such as AARP, Hispanics, and African Americans.

The old paradigm of unions vs. corporations is obsolete. In today's economy, workers negotiate along-

side management, winning shared bonuses.

40 Second and third careers are becoming common, as more people make midlife changes in occupation.

• The fast pace of technological change makes old careers obsolete, even as new ones open up to replace them.

• Americans born at the tail end of the baby boom (1956-1964) held an average of 10 jobs between ages 18 and 38, according to BLS. These job jumpers continue to take short-duration jobs even as they approach middle age: 70% of jobs they took between ages 33 and 39 ended within five years.

• Among these late boomers, college-educated women tended to hold the most jobs overall (11.1) between ages 18 and 38, but their job jumping occurred primarily in their youth. By their middle 30s, they held on average just 2.2 jobs between the ages of 33 and 38, compared with 2.5 jobs on average for all the late boomers, and 2.7 jobs for males with less than a bachelor's degree.

• Career changing may also be increasing, though BLS does not track the phenomenon since there is



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Trend 40 Careers in health-care professions will become popular among mid-life career switchers.

Trend 40

Job Hoppers in the United States

	Total	Average number of jobs for persons ages 18 to 38 in 1978-2000			
		Ages 18 to 22	Ages 23 to 27	Ages 28 to 32	Ages 33 to 38
Total	10.2	4.4	3.3	2.6	2.5
Men (all)	10.4	4.5	3.5	2.8	2.5
Men, less than high-school diploma	11.6	4.6	3.8	3.0	2.7
Men, bachelor's degree and higher	10.0	4.6	3.4	2.6	2.4
Women (all)	9.9	4.3	3.1	2.4	2.4
Women, less than high-school diploma	8.5	3.0	2.4	2.1	2.2
Women, bachelor's degree and higher	11.1	5.4	3.7	2.7	2.2

Source: National Longitudinal Survey of Youth

Educated women are the most-frequent job hoppers in their youth but among the least frequent as they mature.

not a clear definition of what constitutes a “career change”—such as when a technician becomes a manager in the same company or industry. However, Forecasting International believes that people change careers every 10 years.

- Boomers and their children will have not just two or three careers, but five or six, as dying industries are replaced by new opportunities.

- In the United States, 23% of workers surveyed by the University of Phoenix in 2004 reported being dissatisfied with their careers and were considering a change of occupation. Of these, 61% expressed a desire “to do something more fulfilling,” such as entering a “helping profession.”

- Seventy percent of Irish workers surveyed in 2004 said they hoped to make a career change in the near future, according to the recruitment Web site Irishjobs.ei. Women and individuals in the 26–35 age group were most likely to report the desire to change careers. “Personal fulfillment” was the biggest reason cited for making the change.

Implications: “Earn while you learn” takes on new meaning: Most people will have to study for their next occupation, even as they pursue their current career.

In many two-earner couples, one member or the other will often take a sabbatical to prepare for a new career.

Self-employment is becoming an increasingly attractive option, as being your own boss makes it easier to set aside time for career development. This is especially true for Gen X’ers and millennials.

Retirement plans must be revised,

so that workers can transfer medical and pension benefits from one career to the next—a change that has long been needed.

41 The work ethic is vanishing.

- More than one-third of U.S. workers reported calling in sick when they were not ill at least once in the past 12 months, and 10% had done so at least three times, according to a 2004 survey by Career-Builder.com.

- Job security and high pay are not the motivators they once were, because social mobility is high and people seek job fulfillment. Some 48% of those responding in a recent Louis Harris poll said they work because it “gives a feeling of real accomplishment.”

- Fifty-five percent of the top executives interviewed in the poll say that erosion of the work ethic will have a major negative effect on corporate performance in the future.

- Ethics at the top are no better: Enron, WorldCom, Tyco International, Adelphia Cable, and ImClone just begin the list of companies under investigation for deceptive accounting practices, looting of corporate assets, and other misdeeds with dire implications for stock values.

- Seeking the root of such problems, a Zogby International poll of college seniors found that 97% said their studies had prepared them to act ethically in the future. However, 73% said professors had taught them that right and wrong are not susceptible to uniform standards, but de-

pend on individual values and cultural norms.

Implications: The new generation of workers cannot simply be hired and ignored. They must be nurtured, paid well, and made to feel appreciated. Training is crucial. Without the opportunity to learn new skills, young people will quickly find a job that will help them to prepare for the rest of their career.

42 Two-income couples are the norm, though the trend may be slowing or even reversing.

- In the United States, both the husband and the wife worked in



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Trend 42 Two-income couples are becoming the norm, though the trend may have peaked. A more common scenario in the future will be for one partner to work while the other takes time off to retrain for a new career.

50.9% of married-couple families in 2003, reports the BLS Current Population Survey. This proportion has declined since 1997, when it was 53.4%. However, the proportion of married-couple families in which only the wife worked rose for the third straight year, to 6.8%, in 2003.

- The percentage of working-age women who are employed has grown steadily throughout the industrialized world. In the United States, it has grown from 46% in 1970 to 68.8% in 2000. The lowest are Italy, Spain, and Mexico, with just 40% of working-age women employed, according to OECD figures.

- This emphasis on work is one big reason the richest 25% to 50% of the U.S. population has reached zero population growth. They have no time for children and little interest in having large families.

- The number of working mothers with young children is actually declining. Only 58% of married women with children under age three held jobs in 2002, compared with 61% in 1997. At the same time, the percentage of married working women with children under a year old fell from 59% to 53%.

Implications: Demand for on-the-job child care, extended parental leave, and other family-oriented benefits can only grow. In the long run, this could erode the profitability of some companies, unless it is matched by an equal growth in productivity.

Two-career couples can afford to eat out often, take frequent short vacations, and buy new cars and other such goods. And they feel they deserve whatever time-savers and outright luxuries they can afford. This is quickly expanding the market for consumer goods and services, travel, and leisure activities.

This also promotes self-employment and entrepreneurialism, as one family member's salary can tide them over while the other works to establish a new business.

Look for families that usually have two incomes, but have frequent intervals in which one member takes a sabbatical or goes back to school to prepare for another career. As information technologies render former occupations obsolete, this will become the new norm.

43 Generation X and the millennials will have major effects in the future.

- Members of generation X—roughly, the 30-plus cohort—and especially of the millennial generation, now in their 20s, have more in common with their peers throughout the world than with their parents' generation.

- There are approximately 50 million people in Europe between the ages of 15 and 24; 30 million more are between 25 and 29. The under-30 cohort represents about 22% of the European population.

- The under-20 cohort is remaining in school longer and taking longer to enter the workforce than before.

- Generation X should be renamed "generation E," for entrepreneurial. Throughout the world, they are starting new businesses at an unprecedented rate.

- The younger millennial generation is proving to be even more business-oriented, caring for little but the bottom line. Twice as many say they would prefer to own a business rather than be a top executive. Five times more would prefer to own a business rather than hold a key position in politics or government.

- Many in generation X are economically conservative. On average, those who can do so begin saving much earlier in life than their parents did in order to protect themselves against unexpected adversity. They made money in the stock market boom of the 1990s, then lost it in the "dot-bomb" contraction, but have left their money in the market. For generations X and millennial, time is still on their side.

Implications: Employers will have to adjust virtually all of their policies and practices to the values of these new and different generations, including finding new ways to motivate and reward them. Generation X and the millennials thrive on challenge, opportunity, and training—whatever will best prepare them for their next career move. Cash is just the beginning of what they expect.

For these generations, lifelong learning is nothing new; it's just the way life is. Companies that can provide diverse, cutting-edge training

will have a strong recruiting advantage over competitors that offer fewer opportunities to improve their skills and knowledge base.

Generations X and millennial are well equipped for work in an increasingly high-tech world, but have little interest in their employers' needs. They also have a powerful urge to do things their way.

As both customers and employees, they will demand even more advanced telecommunications and Internet-based transactions.

44 Time is becoming the world's most precious commodity.

- Computers, electronic communications, the Internet, and other technologies are making national and international economies much more competitive.

- In the United States, workers spend about 10% more time on the job than they did a decade ago. European executives and nonunionized workers face the same trend.

- In this high-pressure environment, single workers and two-income couples are increasingly desperate for any product that offers to simplify their lives or grant them a

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Trend 44 Time is increasingly precious, and stress-related problems will continue to grow.

taste of luxury—and they can afford to buy it.

- China's rapid economic development means its workers are experiencing faster-paced and time-pressured lives. In a recent survey by the Chinese news portal Sina.com, 56% of respondents said they felt short of time. Sixty-four percent said they were never late and were intolerant of other people's tardiness, suggesting a new cultural challenge to the traditional Chinese concept of a leisurely existence.

Implications: Stress-related problems affecting employee morale and wellness will continue to grow. Companies must help employees balance their time at work with their family lives and need for leisure. This may reduce short-term profits but will aid profitability in the long run.

As time for shopping continues to evaporate, Internet and mail-order marketers will have a growing advantage over traditional stores.

Management Trends

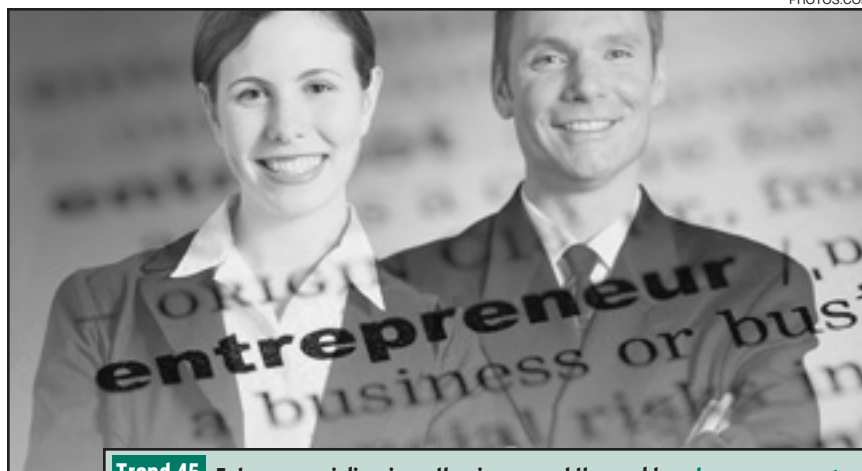
45 More entrepreneurs start new businesses every year.

- Workers under 30 would prefer to start their own company, rather than advance through the corporate ranks. Some 10% are actively trying to start their own businesses, three times as many as in previous generations.

- A large majority simply distrust large institutions. Most believe that jobs cannot provide a secure economic future in a time of rapid technological change. Examples of Silicon Valley start-ups that turned their founders into billionaires "overnight" dramatically advanced this change of values. This attitude seems to have been moderated only slightly by the failure of many dot-com companies.

- By 2006, the number of self-employed people in the United States will rise to 10.2 million, according to BLS figures. However, Forecasting International believes that figure to be too low: Expect closer to 12 million self-employed Americans in 2006.

- Women comprise a growing



Trend 45 Entrepreneurialism is on the rise around the world, and women are a growing proportion of the self-employed.

proportion of the self-employed in the United States, up from 26.8% in 1976 to 38.6% in 2003, according to BLS.

- More women also are starting small businesses. Many are leaving traditional jobs to go home and open businesses, even as they begin a family. At least half of the estimated 10.6 million privately held firms in the United States are owned by women, employing 19.1 million people and generating \$2.46 trillion in sales annually.

- Since the 1970s, small businesses started by entrepreneurs have accounted for nearly all of the new jobs created. For much of this period, giant corporations have actually cut employment. In 1995, small, entrepreneurial businesses produced 1 million new full-time jobs vs. barely 100,000 among larger companies.

Implications: This is a self-perpetuating trend, as all those new service firms need other companies to handle chores outside their core business.

It is driven as well by the attitudes and values of generations X and millennial and by the rapid developments in technology, which create endless opportunities for new business development.

Specialty boutiques will continue to spring up on the Internet for at least the next 20 years.

This trend will help to ease the poverty of many developing countries, as it already is doing in India and China.

46 Information-based organizations are quickly displacing the old command-and-control model of management.

- The typical large business is struggling to reshape itself. Soon, it will be composed of specialists who rely on information from colleagues, customers, and headquarters to guide their actions.

- Management styles will change as upper executives learn to consult these skilled workers on a wide variety of issues. Employees will gain new power with the authority to make decisions based on the data they develop.

- Information-based organizations require more specialists, who will be found in operations, not at corporate headquarters. R&D, manufacturing, and marketing specialists will work together as a team on all stages of product development rather than keeping each stage separate and distinct.

- Upper management is giving fewer detailed orders to subordinates. Instead, it sets performance expectations for the organization, its parts, and its specialists and supply the feedback necessary to determine whether results have met expectations.

Implications: This is a well-established trend. At this point, many large corporations have restructured their operations for greater flexibility. However, many others still have a long way to go.

Downsizing has spread from man-

ufacturing industries to the service economy. Again, this process encourages the entrepreneurial trend, both to provide services for companies outsourcing their secondary functions and to provide jobs for displaced employees.

Many older workers have been displaced in this process, depriving companies of their corporate memory. Companies have replaced them with younger workers, whose experience of hard times is limited to the relatively mild recession since 2000. Many firms may discover that they need to recruit older workers to help them adapt to adversity.

47 A typical large business in 2010 will have fewer than half the management levels of its counterpart in 1990, and about one-third the number of managers.

- Computers and information-management systems have stretched the manager's effective span of control from six to 21 subordinates. Information now flows from front-line workers to higher management for analysis. Thus, fewer mid-level managers are needed, flattening the corporate pyramid.

- Downsizing, restructuring, reorganization, and cutbacks of white-collar workers will continue through 2006. Outsourcing will continue to grow until at least 2010.

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Trend 47 Managers will have to be more hands-on as computers and information-management systems enable organizations to shed layers of bureaucracy.

- However, many companies are finding it necessary to bring back older workers, so as to preserve an effective corporate memory.

- Opportunities for advancement will be few because they will come within the narrow specialty. By 2001, only one person for every 50 was promoted, compared with one for every 20 in 1987.

- Information-based organizations will have to make a special effort to prepare professional specialists to become business executives and leaders.

Implications: Top managers will have to be computer-literate to retain their jobs and must make sure they achieve the increased span of control that computers make possible.

Finding top managers with the broad experience needed to run a major business already has become difficult and can only grow more so as the demand for specialization grows.

Executives increasingly will start their own companies, rather than trusting the old-fashioned corporate career path to provide advancement.

48 Government regulations will continue to take up a growing portion of the manager's time and effort.

- In 1996, the U.S. Congress passed regulatory reform laws intended to slow the proliferation of government regulations. Nonetheless, by 2001 more than 14,000 new regulations had been enacted. Not one proposed regulation was rejected during this period.

- The Brussels bureaucrats of the European Union are churning out regulations at an even faster rate, overlaying a standard regulatory structure on all the national systems of the member countries.

- The growth of regulations is not necessarily all bad. A study by the U.S. Congressional Office of Management and Budget estimated that the annual cost of major federal regulations enacted between October 1992 and September 2002 amounted to between \$38 billion and \$44 billion per year. However, the estimated benefits of those regulations added up to between \$135 billion and \$218 billion annually.

Implications: Regulations are both necessary and unavoidable, and often beneficial. Yet it is difficult not to see them as a kind of friction that slows both current business and future economic growth.

The proliferation of regulations in the developed world could give a competitive advantage to countries such as India and China, where regulations that impede investment and capital flow are being stripped away, while health, occupational safety, and environmental codes are still rudimentary or absent.

Other lands, such as Russia, will remain at a competitive disadvantage until they can pass and enforce the regulations needed to ensure a stable, fair business environment.

Institutional Trends

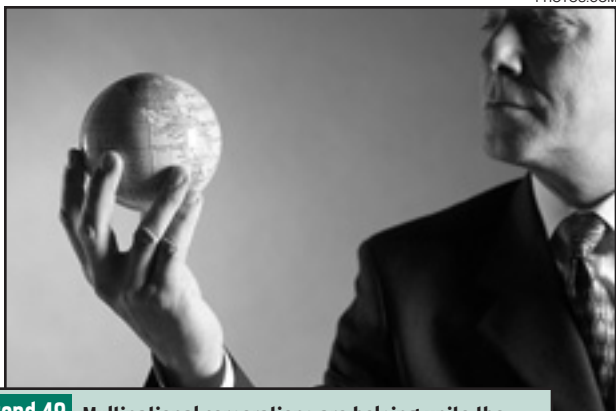
49 Multinational corporations are uniting the world, but also growing more exposed to its risks.

- Multinational corporations that rely on indigenous workers may be hindered by the increasing number of AIDS cases in Africa and around the world. Up to 90% of the population in parts of sub-Saharan Africa reportedly tests positive for HIV in some surveys. Thailand is equally stricken, and many other parts of Asia show signs that the AIDS epidemic is spreading among their populations.

- The continuing fragmentation of the post-Cold War world has reduced the stability of some lands where government formerly could guarantee a favorable—or at least predictable—business environment.

- One risk now declining is the threat of currency fluctuations. In Europe, at least, the adoption of the euro is making for a more stable economic environment.

Implications: It is becoming ever more difficult for business to be confident that decisions about plant location, marketing, and other critical issues will continue to appear wise even five years into the future. All long-term plans must include an even greater margin for risk management. This will encourage outsourcing, rather than investment in off-



Trend 49 Multinational corporations are helping unite the world but exposing themselves to increased risk, such as to terrorism and to the effects of local problems like AIDS or natural disasters.

shore facilities that could be endangered by sudden changes in business conditions.

Countries that can demonstrate a significant likelihood of stability will enjoy a strong competitive advantage over neighbors that cannot. Witness the rapid growth of investment in India now that deregulation and privatization have general political support, compared with other Asian lands where conditions are less predictable.

Major corporations also can help to moderate some risks in unstable countries, such as by threatening to take their business elsewhere.

50 International exposure includes a greater risk of terrorist attack.

- State-sponsored terrorism appears to be on the decline, as tougher sanctions make it more trouble than it is worth. However, some rogue states may still provide logistical or technological support for independent terrorist organizations when opportunities present themselves.

- Until recently, attacks on U.S. companies were limited to rock-throwing at the local McDonald's, occasional bombings of bank branches and of U.S.-owned pipelines in South America, and kidnappings. Since September 11, U.S.-owned hotel chains have experienced several major bombings, in part because U.S. government facilities overseas have been effectively hardened against terrorist assault.

- Nothing will prevent small, local political organizations and special-interest groups from using terror to promote their causes.

- However, as the United States has been forced to recognize, the most dangerous terrorist groups are no longer motivated by specific political goals, but by generalized, virulent hatred based on religion and culture.

- On balance, the amount of terrorist activity in the world is likely to go up, not down, in the next 10 years. This was seen in corrections to the State Department's April 2004 report on terrorism, which originally seemed to show a sharp decline in terrorist incidents and was used to claim success for the Bush administration's tactics in the "war on terror." In fact, the State Department's corrections in June 2004 showed that terrorist attacks have risen sharply since the invasion of Iraq, both in number and in severity.

- Risks of terrorism are greatest in countries with repressive governments and large numbers of unemployed, educated young men.

Implications: Western corporations may have to devote more of their resources to self-defense, while accepting smaller-than-expected profits from operations in the developing countries.

Like the attacks on the World Trade Center and Pentagon, and the American embassies in Kenya and Tanzania before them, any attacks on major corporate facilities are likely to be designed for maximum destruction and casualties. Bloodshed for bloodshed's sake has become a characteristic of modern terrorism.

Where terrorism is most common, countries will find it impossible to attract foreign investment, no matter how attractive their resources.

Though Islamic terrorists form only a tiny part of the Muslim community, they have a large potential

for disruption throughout the region from Turkey to the Philippines.

The economies of the industrialized nations could be thrown into recession at any time by another terrorist event on the scale of September 11. This is particularly true of the United States. The impact would be greatest if the attack discouraged travel.

The U.S. economy is being affected already by American antiterrorism measures. Since Washington began to photograph incoming travelers and required more extensive identification from them, tourism to the United States is off by some 30%. The number of foreign students coming to American universities has declined by a similar amount.

51 Consumers increasingly demand social responsibility from companies and each other.

- Companies increasingly will be judged on how they treat the environment. For example, home-improvement retailers Home Depot and Lowe's have stopped buying wood from countries with endangered forests.

- Safety testing of children's products also enforces corporate responsibility. One company recently was forced to recall 7 million child car seats. Another recalled more than 440,000 pairs of children's sneakers with metal eyelets that could become detached and pose a choking hazard.

- Government intervention will supplant deregulation in the airline industry (in the interest of safety and services), financial services (to control instability and costs), electric utilities (nuclear problems), and the chemical industry (toxic wastes).

- With 5% of the world's population and 66% of the lawyers on the planet, American citizens will not hesitate to litigate if their demands are not met.

Implications: For industry, this represents one more powerful pressure to adopt environmentally friendly technologies, to work with area schools and community groups, and to participate in other local activities. It also represents an opportunity to market to environmentally concerned consumers.



Trend 52 Institutional integrity may become the norm as stakeholders demand transparency and accountability.

As the Internet spreads Western attitudes throughout the world, environmental activists in other regions will find ways to use local court systems to promote their goals. Litigation is likely to become a global risk for companies that do not make the environment a priority.

52 On average, institutions are growing more transparent in their operations, and more accountable for their misdeeds.

- China, rated by PricewaterhouseCooper as the most opaque of the major nations, was forced to open many of its records as a precondition for joining the World Trade Organization.

- In India, a country generally regarded as one of the world's most corrupt, the Central Vigilance Commission has opened the country's banking system to more effective oversight.

- In the United States, powerful forces are inspiring demands for greater transparency and accountability in large institutions. These include both the current wave of business scandals and the controversy over child abuse within the Catholic Church.

- The wave of support for government since the September 11 terrorist attacks has made Americans willing to accept greater transparency—that is, less privacy—in their personal lives.

- At the same time, the nationalist response to September 11 temporarily muted most demands for transparency in the American govern-

ment. In mid-2004, this reluctance to question Washington appeared to be evaporating in the wake of the torture scandal in Iraq.

- Wars against terrorism, drug trafficking, and money laundering are opening the world's money conduits to greater scrutiny. Also opening up are the operations of nongovernmental organizations that function prima-

rily as charitable and social-service agencies but are linked to terrorism as well.

Implications: Countries with high levels of transparency tend to be much more stable than more opaque lands.

They also tend to be much more prosperous, in part because they find it easier to attract foreign investment.

Greater transparency seems likely to reduce the operational effectiveness of the world's drug traffickers and terrorist organizations.

53 Institutions are undergoing a bimodal distribution: The big get bigger, the small survive, and the mid-sized are squeezed out.

- By 2010, there will be only five giant automobile firms. Production and assembly will be centered in Korea, Italy, and Latin America.

- Seven domestic airlines in the United States today control 80% of the market, leaving the smaller domestic carriers with only 20%.

- Where local regulations allow, mergers and acquisitions are an international game. Witness the takeovers of the United States MCI by WorldCom in the United Kingdom and of Chrysler by Daimler-Benz. The continuing removal of trade barriers among EU nations will keep this trend active for at least the next decade.

- We are now in the second decade of the micro-segmentation trend, as more and more highly specialized businesses and entrepreneurs search for narrower niches. These small firms will prosper, even

as mid-sized, "plain vanilla" competitors die out. This trend extends to nearly every endeavor, from retail to agriculture.

- "Boutique" businesses that provide entertainment, financial planning, and preventive medical care for aging baby boomers will be among the fastest-growing segments of the U.S. economy.

Implications: Thus far, industries dominated by small, regional, often family-owned companies have been relatively exempt from the consolidation now transforming many other businesses. Takeovers are likely even in these industries in the next decade.

This consolidation will extend increasingly to Internet-based businesses, where well-financed companies are trying to absorb or outcompete tiny online start-ups, much as they have done in the brick-and-mortar world.

This trend leads us to believe that AT&T may be reconsolidated by 2010.

No company is too large to be a takeover target if it dominates a profitable market or has other features attractive to profit-hungry investors. □



Cetron



Davies

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