

LIVING IN THE U.S.A. – 2000 TO 2020*

110 MILLION HOUSEHOLDS IN REVOLUTIONARY TIMES

Changing Realities Confronting America's Consumers and Constituencies

compiled by

DAVID PEARCE SNYDER

Contributing Editor

The Futurist

David Pearce Snyder • The Snyder Family Enterprise • www.the-futurist.com

8628 Garfield Street • Bethesda, MD 20817 • david@the-futurist.com • 301-530-5807

ABSTRACT

Although it has been more than half a century since the world's first electronic computer was switched on, it has only been in the two or three years that most people have begun to fully comprehend the power of information technology to alter the details of every aspect of daily life and work. It is now clear that, like the Agricultural, Mercantile, and Industrial Revolutions before it, the "Information Revolution" will transform the way society organizes most of its essential functions, including employment, healthcare, education, shopping, recreation, housing and other key elements of domestic enterprise.

*Originally published in **Timeshare & Vacation Industry Review**, January 2000; revised and updated for general audiences, April 2005.

TABLE OF CONTENTS

| | Page |
|--|------|
| INTRODUCTION | 3 |
| WHAT WE CAN – AND CAN’T – KNOW ABOUT THE FUTURE | 4 |
| I. SOCIETY’S CHANGING ENVIRONMENT – 2000 TO 2020 | 5 |
| • The Economy – 2000 to 2020 | 7 |
| • Technology – 2000 to 2020 | 8 |
| • Demography – 2000 to 2020 | 10 |
| II. SOCIETY ADAPTS TO CHANGE – 2000 TO 2020 | 13 |
| III. MASS MARKET DYNAMICS | 15 |
| IV. LIFE STYLES OF THE STRESSED BUT HOPEFUL | 17 |
| V. POST-INDUSTRIAL POLITICS | 20 |
| EXHIBITS – following page | 22 |

INTRODUCTION

Like previous techno-economic revolutions, the Information Revolution is expected to produce a rising tide of productivity improvement and prosperity that will “lift all boats.” The U.S. Labor Department forecasts that average annual U.S. household income will increase from \$43,000 p.a. today to \$70,000 p.a. by 2020. In the interim, however, rising productivity will also make millions of workers redundant in mid-career, and threaten the economic security of many – perhaps most – Americans.

We are, after all, going through a genuine techno-economic revolution of historic proportions. New productive technologies, as economist Joseph Schumpeter once famously observed, send “waves of creative destruction” rolling through the marketplace. And because national economies are VERY LARGE SYSTEMS, the process of creative destruction cannot happen over night. It typically takes a generation – 30 to 35 years – for a country’s institutions to fully adapt to the new operational realities made possible by a mature new technology.

The creative destruction of America’s industrial era institutions began with the corporate re-engineering and down-sizing of the early 1990’s, and continues today with outsourcing and off-shoring. But we still have another 15 years of institutional adaptation ahead of us – especially in the public sector – before this turbulent phase of the Information Revolution is over.

The family is as adaptive as any institution in society, **and more adaptive than most**. Over the next 10 to 20 years, as information technology (IT) becomes as cheap, as powerful, and as easy to use as the automobile or electricity were during their initial maturation, there is every reason to believe that America’s families will make substantial investments in IT, to help them deal with their changing economic circumstances. In the process, they will dramatically expand and strengthen the domestic sector’s formal contributions to our common national enterprise by restoring to households their traditional function as economic *producers* as well as consumers, just as millions of family farms once functioned in the 19th Century Agrarian economy.

As a foundation for exploring the society’s probable future behavior, this paper presents a compilation of the principal significant changes that will predictably confront America’s highly adaptive consumers and constituencies.

WHAT WE CAN – AND CAN'T – KNOW ABOUT THE FUTURE

All future developments or events can be characterized as being either RANDOM or INERTIAL. Random events, by definition, cannot be reliably forecast, while inertial developments can be accurately forecast years into the future with considerable consistency.

THE RANDOM FUTURE – While some random aspects of the future arise out of the dynamics of our natural environment – climate, earthquakes, meteors, etc. – most of the randomness in life is the result of the dynamics of unpredictable human behavior. Neither the weather nor voter, consumer or investor *behavior* can be reliably predicted, which means we cannot forecast political developments, stock market behavior or economic performance with consistency. Clearly, the future institutional operating environment will be filled with many unpredictable events.

THE INERTIAL FUTURE – Inertial trends and developments are implicit in the physical realities of the present and the recent past. For the United States, the inertial forces that will most powerfully shape our future during the next ten to twenty years can be accurately extrapolated from the current size and make-up of our 291 million population, our twenty million private and public enterprises, our \$11 trillion annual economy and an R&D pipeline filled with emerging new technologies, as they evolve over the next ten to fifteen years. The forces of inertial continuity and change in our world are so powerful that random developments seldom alter them. However, unpredictable events often serve to hasten or delay the long-term certainties of our future. (In their Year 2000 Long-Range Plan, for example, the U.S. Postal Service projected that steadily growing use of on-line banking and bill-payment would cause 1st Class letter volumes to begin dropping in 2004. But the September, 2001 anthrax attacks hastened that future three full years by prompting millions of people to start using electronic payment systems, causing 1st Class mail volumes to drop 5% literally overnight.)

Among the inertial realities that will shape the future for America's private and public sector enterprises, there are three instrumentally important sets of reliable forecasts that form the basis of what futurists call "the knowable future!"

- **Demographic Forecasts** – The future size and make-up of the U.S. adult population – including our labor pool and our consumer markets – can be accurately forecast fifteen years out.
- **Econometric Forecasts** – The future size and make-up of the U.S. economy and workforce can be accurately forecast ten years out.
- **Technologic Forecasts** – Mass-market applications of new technology can be accurately forecast seven to eight years out.

I. SOCIETY'S CHANGING ENVIRONMENT

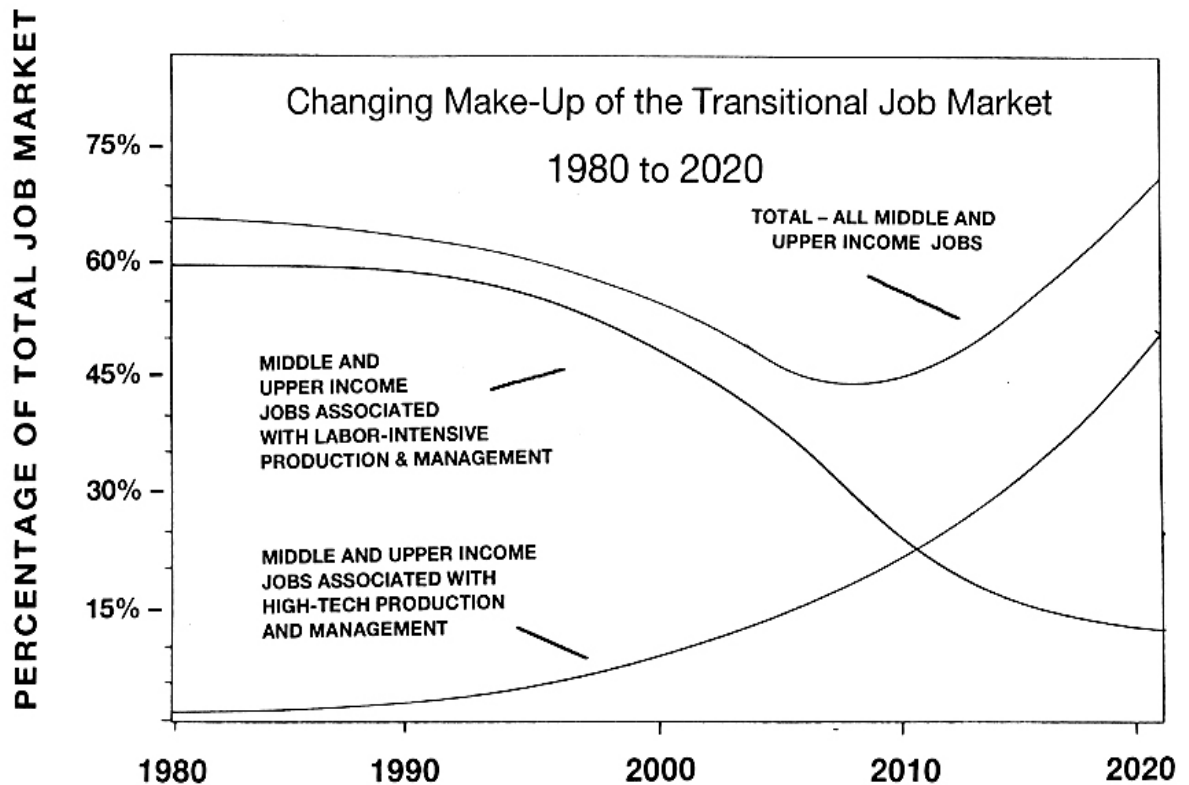
1. *THE ECONOMY – 2000 to 2020*

- A. After over twenty years of stagnant productivity improvement rates and falling personal income (which is characteristic of the early, counter-productive stages of **all** techno-economic restructuring), U.S. wages and productivity improvement rates have been rising since August, 1994. While wages fell briefly after the 2001 Recession, they resumed rising in the first quarter of 2004. This rise in average wages is largely attributable to rapidly rising U.S. productivity improvement rates, which doubled over their long-term average in 1996, and tripled by 2002. This suggests to economic historians that America has now entered the final, “hyper-productive” stage of the Information Revolution, and that we should see a sustained surge in the general levels of prosperity over the next 20 years.
- B. Information technology (IT) enhances economic productivity both *directly* and *indirectly*. In its **direct** application to existing operations, IT can reduce the costs of all forms of routine, repetitive information work – sorting mail, accounting for transactions, processing tax returns, metering work flow, answering frequently asked questions, etc. **Indirectly**, the accurate efficiency with which IT can search for, find, compile and analyze disparate bodies of information permits the transformation of existing organizations and the invention of new ones. E-tailing is one such transformational development; flex-place employment is another. The truly transformational impact of IT upon private and public enterprise alike has been *the outsourcing revolution*.
- C. Because the Internet – our new information infrastructure, or “info-structure” – enables businesses to communicate and collaborate with each other so efficiently, a rapidly widening array of enterprises are choosing to contract out their non-core operations to suppliers who can perform those operations better and more cheaply, while concentrating their attention and resources on their core competitively superior functions. This dismantling of our previously self-sufficient industrial bureaucracies is not only producing sustained increases in productivity (AND profitability), it is permanently transforming the structure of private and public institutions from vertically-integrated authoritarian hierarchies to virtually-integrated networked collaboratives. The resulting flat profile of these highly productive distributed enterprises reflects the elimination of hundreds of thousands of white collar jobs.
- D. While the bulk of U.S. employers are outsourcing their non-core functions to other U.S. firms, a small but growing number of jobs are being outsourced to suppliers outside the United States, where labor costs are a fraction of those at home. Because such jobs are lost to the American economy, the practice of off-

shoring is politically controversial. Although economists generally agree that the export of jobs to low-cost labor-surplus economies benefits the exporting economy over the long-term, the short-term domestic job loss clearly has immediate detrimental effects upon the local communities – and the workers – whose jobs are sent overseas.

- E. While rising productivity and off-shoring will continue to generate downsizing in private and public sector institutions, job creation is expected to continue outstripping job elimination. More important, the U.S. Bureau of Labor Statistics (BLS) forecasts that 60% of all *new* jobs created during the next ten years will pay average or above-average salaries and benefits.
- F. While BLS 10-year forecasts have consistently proven accurate over the past half century, a number of economists caution that such extrapolations may prove unreliable guides to the **post**-industrial workplace. Specifically, critics point out that over 60% of the jobs created since the 2001 Recession pay less than the median wage. The gap between the bottom and the top of U.S. income distribution – which had widened substantially between 1970 and 1990 – narrowed during the 1990's, but it has increased over the past three years. What's more, over 17% of all the jobs created since 2001 are contingent (temporary or part-time) positions, offering few benefits and no long-term employment security.
- G. Economic historian Joseph Schumpeter first referred to techno-economic revolutions as “waves of creative destruction,” because newly-matured technologies are initially used to improve the operations of existing enterprises **before** they are used to create new high value products and services. New technologies typically enhance existing operations by increasing unit labor output, reducing total labor input and eliminating millions of rank-and-file jobs, (a reasonably straight-forward management task). The creation of new technology-based high-value products and services requiring large numbers of technology-wielding high-value adding employees is a much less straight-forward task, involving entrepreneurs, venture capitalists, inventors, false starts, dead ends and high risks.
- H. Historically, a broad rise in general prosperity is one of the **last** major effects of a techno-economic revolution -- typically following by a generation the oligopolistic concentration of wealth and income that characteristically accompanies the initial introduction of a newly-matured technology. Eventually, any free-market, capitalist economy can be expected to fully realize the productive potential of a new technology, and the resulting tide of rising prosperity will lift most boats higher than they have ever been before. Until this happens, however, roughly two-thirds of all U.S. workers will earn less than a median wage, while income distribution will be more concentrated than it has been for 70 years, and wealth more concentrated than it has been since the late 19th Century.

As the Graph below suggests, America is currently in the “trough” of Schumpeter’s “wave of creative destruction.”



©1988 David Pearce Snyder • The Snyder Family Enterprise • www.the-futurist.com

- I. Because previous technologic revolutions have led to both improvements in economic productivity AND substantial increases in general levels of prosperity, most economists are confident that the Information Revolution will do the same. **But, this confidence is an article of faith, not a rigorous forecast!** While politicians and educators casually prescribe a college degree as the universal guarantor of a high wage career, BLS forecasts indicate that only one-third of all new jobs will require a post-secondary degree. Existing middle-income jobs that do not require a post-secondary education are being automated – or “info-mated” – out of existence, ... or exported. But, most importantly, no one has so far offered a credible description of a new generation of middle-income, rank-and-file jobs that will replace those we are losing.
- J. In fact, published multi-factor scenarios for the U.S. economy over the next ten to twenty years uniformly reflect a workplace where two-thirds of the jobs will pay lower middle income wages or less, and will offer only limited benefits and

little job security. (See Exhibit, page 25). These gloomy visions are, however, extrapolated from our devolving industrial past. It is reasonable to assume that our democratic, capitalist free marketplace economy will, as it has done in the past, reinvent the ways in which we develop and employ our most valuable and productive asset: our human resources. However, it is a process that the entire nation will have to work through together: the public and private sectors, labor and management, teachers and students, politicians and voters, civil servants and the citizens they serve. It is likely to take another ten to fifteen years, and it will not be easy ... or painless. (NOTE: For a detailed description of the coming transformation of work in America, see “Extra-preneurship: Re-Inventing Enterprise for the Information Age” by David Pearce Snyder, in the July-August, 2005 issue of *The Futurist*.)

- K. Because of the ongoing restructuring of employment and the concomitant shrinkage of our social safety net, 70% of all married couples between ages 19 and 55 will continue to both work full time in order to maintain middle-income standards of living. Continued high workforce participation rates will keep most U.S. adults short of time, **sustaining strong marketplace demands for customer convenience and consumer services**. Concurrently, demands for luxury goods (including second homes), and high value personal services will remain high, reflecting the continued concentration of wealth and income-earning capacity in America.

2. **TECHNOLOGY – 2000 to 2020**

(NOTE: Several families of new technology – e.g. bio-engineering, nano-technology, proteomics, etc. – clearly hold great potential to change the world and improve the quality of our lives. But none of these breakthrough innovations is sufficiently developed that it will become a pervasive, multi-dimensional presence in the economy or the mass-market consumer society during the next ten to fifteen years. Information technology (IT), on the other hand, has achieved ubiquity in our daily lives. It is already having instrumental impacts on the principal components of human enterprise – economic production and distribution, commercial transactions, health, education, and leisure, etc. From now on, IT will have transformational effects on everything we do, in America and around the world.)

- A. The average U.S. worker already spends one-third of his/her workday at a computer, and one-quarter of the workday on the Net. By 2010, essentially all workers – from farmers and factory workers to waitresses and taxi cab drivers – will routinely use information technology (IT) to do their day-to-day jobs. Meanwhile, 60% of all U.S. households are currently online, up from 43% in 2001. By 2010, 70% to 75% of households will be online.
- B. The next five years will see the integration of the telephone, television and computer into a home information appliance at mass-market prices. Interactive

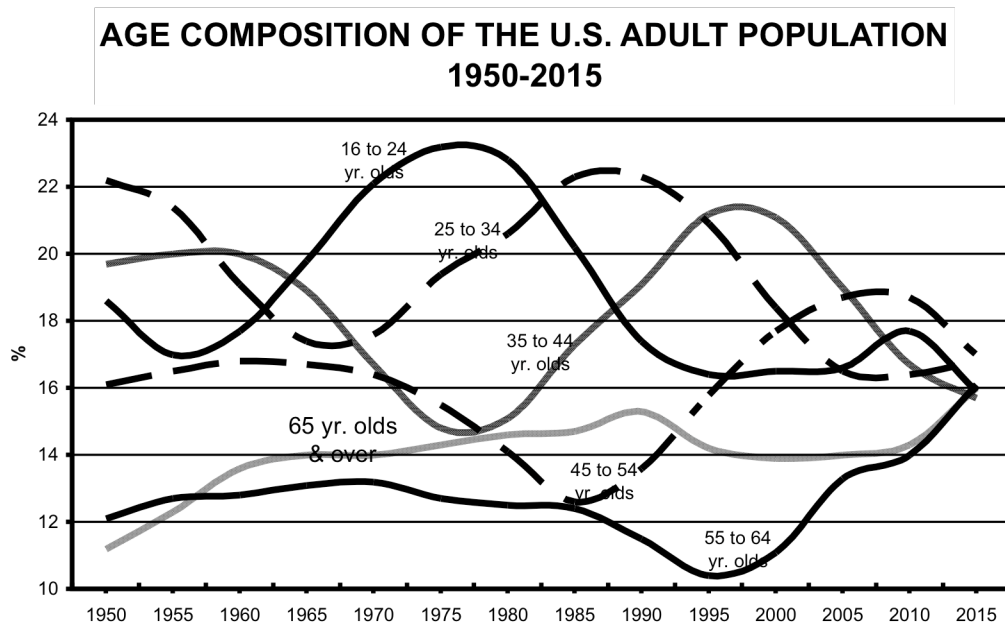
virtual personalities (“Veepers”), equipped with intelligent software, will help consumers overcome techno-phobia, enabling millions of people to make extensive commercial and personal uses of IT for the first time. By 2012, 250 million Americans, and 1.5 billion people worldwide will be online – largely via Web-enabled cell phones – and we will truly have become a “global village.”

- C. We have entered the “Post-PC Era” of the Information Revolution. From now on, the desktop computer will no longer be the sole device for doing things digitally. In the decade ahead, the desktop will primarily become the tool of content creators, programmers, researchers, publishers and power players, etc. For everybody else, the next 10 years will bring a cornucopia of sophisticated computing and communicating capacities for the pocket, the car, the home and the classroom.
- D. Increasingly, while we are away from our homes or offices, we will remain connected to the Web via our own “personal digital appliances” (PDA’s) or Web-enabled cell phones, both of which combine the functions of a palmtop computer, cell phone, pager, video camera and wireless Internet terminal. Telecommunications experts agree that, by 2010, 80% to 90% of **all** Internet access will be from mobile wireless devices, including laptop computers, Web-phones and PDA’s. Acquiring your first Web-phone has already become a universal rite of passage to adulthood around the world, more important for most young people than getting their own car. For many people – including most users in the developing nations – their PDA/Web phone will be the **only** computer they own. They will rent memory and applications software from Internet service providers and use their flat-panel television screens as monitors.
- E. Most Americans, however, reluctant to place their vital personal records in the hands of on-line service providers, will retain a home computer with a massive memory as a means of securing their financial, medical and personal records from loss, theft or unauthorized access. These “data vaults” will also be used to store back-up masters for household entertainment collections – CD’s, DVD’s, games, home videos, etc. In a growing number of homes, this mass data storage unit, with a terabyte or more of memory, will be a major appliance by 2005-7.
- F. A multitude of telecom distribution media – broadcast, copper wire, fiber-optic cable, Wi-Fi/Wi-Max, infra-red, microwave, cellular, ultra-wideband, satellite, etc. – will carve out lucrative commercial and consumer market niches concurrently – both domestically and internationally – and will remain *simultaneously competitive* well into the 21st Century.
- G. RFID (Radio Frequency Identification) technology will become a “tera-tech” – a new \$1 trillion technology-based industry – within ten years, by making possible the unique electronic labeling of everything from individual auto parts and bottles of wine to lingerie and postage stamps. “Smart” warehouses will take their own inventories; smart refrigerators will keep track of their contents;

smart medicine cabinets will match new medications with doctor’s prescriptions; and smart washing machines will set themselves correctly for the fabrics they are about to wash.

3. **DEMOGRAPHY – 2000 to 2020**

(NOTE: The most striking demographic reality of the next ten years is that, for the first time in half a century, one adult age group – the Baby Boomers – will no longer be dominant. (See graph, below) By 2015, each of the six 10-year age groupings (cohorts) that make up our adult population will represent roughly *one-sixth* of the total. This has important implications for managers, mass-marketeers and politicians, who will find themselves respectively supervising, selling to and serving three adult generations simultaneously: the Baby Boom [born 1946-1964]; the Baby Bust [born 1965-1984]; and the Baby Boom Echo [born 1985 to 2002].)



- A. Because of the low birthrates of the 1970's and early 1980's, (demographers call it the “Baby Bust”) the young adult share of the U.S. population (16-24 year-olds) will be at a 50 year low during the coming decade, and the numbers of new households formed in the U.S. during the next ten years will grow more slowly than at any time since the 1930's.
- B. The relatively small size of the inter-boom “Baby Bust” – the people born after the end of the post-WWII Baby Boom (1964) and before the beginning of the Baby Boom “Echo” (1984) – will not only curtail the household formation rate,

but will also shrink the entry level labor pool and slow workforce growth. What's more, as the foregoing Graph shows, the numbers of people in the retirement-prone 55-to-64 year-old age cohort will increase by 50% between now and 2015. Futurists have long warned that the mass-retirement of the Baby Boomers would combine with the predictable short-fall in entry-level recruits to produce a "perfect demographic storm;" a shortage of qualified workers that could cripple U.S. competitiveness with wage inflation and reduced domestic output.

- C. To cope with the ongoing short-fall in entry-level recruits, Congress has raised immigration quotas; as a result of which, **nearly one-half of all new U.S. workers during the past decade have been foreign born**. Today, immigrants make up 11% of the American population and 14% of our workforce, including 20% of all minimum wage jobs. A growing number of U.S. employers are also electing to off-shore some of their operations to tap low-cost labor in developing countries. While politically controversial, both the import of workers and the export of jobs can be expected to continue.
- D. While the numbers of a population can be reliably forecast, *the future adaptive behavior of a population is much less predictable*. In the U.S., average age at time of retirement began rising in the mid-1980's. In 1980, the average age at retirement was 58; today it is 61, and by 2015, it is likely to be 67. AARP surveys show that over 70% of Boomers plan to keep working into their 70's and 80's, **even if their financial circumstances do not require it**. In November, 2004, the IRS published proposed new regulations that would allow employees aged 59 ½ or older to begin drawing *a pro-rata share* of their pensions if they participate in formal voluntary "phased-retirement" programs through their employers.
- E. As average life-span has risen and morbidity rates have fallen, growing numbers of older Americans are choosing to "age on the job." Simultaneously, as the Boomers put off retirement from full-time work, the **next** generation – the Baby Bust – is putting off growing up, by delaying marriage and child-bearing, prolonging their formal education, and choosing to live with their parents; nearly two-thirds of college students today return home after graduation, a phenomenon that the demographers call the "Baby Boom-er-ang."

(NOTE: A 2004 Accenture survey of 1500 recent or soon to be college graduates in the U.S., U.K., France, Germany and Spain found two-thirds were in no hurry to commit themselves to a career, preferring instead to "watch movies, work part-time, travel and take courses that interested them." The same survey, conducted by Accenture, the international consultancy, found that 80% of the respondents felt that they did not possess sufficient skills to "cope with the real world" or the "ability to produce high quality work." While most respondents said they regarded "a good training program" as the most important factor in their post-college job search, fewer than one quarter of them said they

were willing to spend their own time or money on such training. Most reported that they were looking for employers who would provide them with skills training while paying them a salary.)

F. While 2/3 of college graduates have “failed to launch” after completing their post-secondary schooling, the remaining 1/3 – 5 to 6 million people aged 24 to 39 – appear to have found rewarding workplace engagement. But, like young adults throughout the mature industrial societies, these successfully launched alumni are delaying marriage, creating a new consumer demographic in Europe, North America and Japan: Young Upwardly-Mobile Professional Singles, or “YUMPSies.” YUMPSies favor car-free, center city living, and spend freely on quality personal products and services. (Retailers *love* YUMPSies, who have BOTH discretionary income AND spontaneous, unhabituated shopping patterns; artful advertising works on these folks.)

G. **Three fundamental stages of adult life in America – long in development – are now becoming well-defined in the nation's demographic profile:**

- **Pre-Family Consumers** – 50 million single young adults (19 to 39 year-olds), one-half of whom live with their parents, one-sixth of whom live alone, and one-third of whom live in congregate housing with one-or-more other adults who are un-related by blood or marriage – some of whom are “significant others,” and some of whom are simply room-mates.

- **Families** – 110 million adults of all ages living with one or more minors and/or adults with whom they are related by blood or marriage.

- **Post-Family/Non-Family Consumers** – 50 million mature adults, (aged 40 years or older), including 8 million “never-marrieds;” two-thirds of all these consumers are single, but one-third of them live with one or more non-spouse adults in individual residences, or in institutional settings.

(NOTE: The marketplace utilities of these three groups for products and services are sufficiently different from one another that producers and providers will increasingly particularize their output for each of these populations, and subsets of these populations.)

H. The elderly population (over-85) is currently increasing at the rate of 50% per decade (from 3 million in 1990 to 4.6 million in 2000, and to 6.1 million by 2010). About 40% of these people live alone, and they will be more and more dependent upon their families *and their IT appliances* for social contacts and domestic support, including finances, entertainment, living assistance, health monitoring and increasingly, the delivery of medical care. (Currently, only 2.5% of older Americans live in elder-care facilities, while 30% live with their spouses and 25% with other relatives, usually adult off-spring. Statistical sampling results suggest that between 30% and 45% of all people over 85-years experience

some degree of dementia. It is unclear how families will adapt to such rapid increases in the numbers of dependent elderly.)

- I. Since birth rates are highly responsive to economic conditions and consumer expectations, it is not possible to precisely forecast the numbers of children that Americans will “produce” in the decade ahead. However, U.S. fertility rates remain at replacement levels (notably higher than those of all other industrial nations), and the Census Bureau projects that – absent dramatic changes in American behavior – the U.S. population will **double** this century from 281 million in 2000 to 571 million by 2100. (DOUBLE! Where will we put all of us?) This gives a whole new meaning – and urgency – to the problem of suburban sprawl. The State of New Jersey has already declared itself “built out,” having just authorized “the last developable land” in the State! This issue, and the accompanying water rights issues, will only intensify in the years ahead!
- J. Because 12% of the current U.S. population is foreign born, and because many immigrants – especially those from Mexico – have higher birth rates than native-born Americans of ALL races, the Euro-descended, non-Hispanic share of the total U.S. population is currently projected to fall from 75% (in 1990) to 50% by 2050, and 40% by 2100. The greatest increase will be among Hispanics, (from 13% of U.S. population today to 33% by 2100), while Asians will be the fastest growing (from 4% to 13%). The African-American share of the population is expected to remain unchanged – at 13% – throughout the Century.

II. SOCIETY ADAPTS TO CHANGE

2000 to 2020

- A. Multiple economic and demographic factors (discussed in the preceding pages) will require most U.S. adults to be gainfully employed through 2020. Simultaneously, the slow growth of the labor pool will force employers to hire most adults – including parents of minor children, caregivers of dependant relatives and millions of home-bound disabled adults, all of which will increase the socio-economic utility of home-based employment. At the same time, growing numbers of employers will actually **mandate** home-based employment for some of their workers as a means of reducing office space rental costs. Today, 24 million salaried employees work at home at least one day a month; by 2015, 40 million salaried employees will be working at home at least once a week!
- B. By 2005, state and local governments will begin using tax incentives to encourage both employers and employees to adopt “flex-place” work arrangements – telecommuting – as a means of alleviating traffic gridlock, conserving energy and reducing air pollution/greenhouse gas generation. These

incentives will accelerate the shift to home-based salaried employment. Full-time telecommuters will make up 10% of the white collar workforce by 2012, up from 1%-2% today.

- C. Continued outsourcing and de-layering by large and medium-sized institutions will fuel accelerated growth of "info-preneurships" – e.g. self-employed and sole-proprietor producers of contract information products and services – who are largely home-based – and who will rise from 9% of all U.S. workers in 2000, to 15% or 16% of all workers by 2015.

(NOTE: Steadily rising productivity, plus off-shoring and the migration of white-collar employment into households will combine to produce an on-going surplus of office and industrial space throughout the U.S., while continued population growth (2.8 million new Americans each year) will exacerbate the existing chronic shortage of affordable housing. The conversion of vacant production facilities – offices, factories, warehouses – into residential and commercial space will be a central feature of the nation's adaptation to post-industrial realities, and will be crucial to the continued economic viability of most older local communities and neighborhoods nationwide.)

- D. The growth of self-employment, plus the increasing adoption of "flex-place" arrangements for salaried work will combine to shift 20% to 25% of all gainful employment into the home by 2015. This restoration of economic production to America's households will be instrumental in strengthening the nation's families and revitalizing neighborhoods. It will also encourage household expenditures on home-improvements and expansions, on durable goods, and on outsourced domestic services – e.g. home maintenance, yard care, party planners, interior decorators, etc.
- E. As the Baby Boomers have matured, they have begun to add "granny flats" and "mother-in-law wings" to their suburban homes in order to accommodate their aging parents. So long as seniors remain in good health, they prefer to live on their own. As the elderly become infirm, however, most – by mutual preference - are cared for by their own adult children rather than by an institution. By 2020, one-third of all U.S. households are likely to include at least one elderly relative.
- F. As Baby Boomers increasingly find themselves living under the same roof with **both** their grown children **and** their aging parents, the extended household – our primary social safety net in the pre-Industrial era -- will be given new life in America's post-industrial suburbs. (Demographers have already begun calling Boomers the "Sandwich Generation.") The inter-generational transfer of income and wealth implicit in the re-establishment of the extended household will pose a potential for substantial changes in financial and retirement planning.
- G. As millions of American families expand their homes to accommodate home-based employment and relatives young and old, they will dramatically alter the

character of neighborhoods, and the face of suburbia. Billions will be spent just to “elder-proof” existing residences. Annual expenditures on home improvements and additions will surpass amounts spent on new home construction before 2010, and most new housing will include office space as a standard feature, as “living rooms” become “working rooms.”

- H. Because business operating costs in rural areas are 15% to 20% lower than in cities and suburbs, some types of employers, including small manufacturers, will continue to migrate out of cities and suburbs in order to remain competitive in the face of growing, low-cost foreign competition. Retirees and foot-loose infopreneurs in search of lower living costs and high quality living environments, plus low-skill workers fleeing competition from cheap immigrant labor, will all swell the exodus from metropolitan areas. Of the three to five million Americans who will relocate to the countryside over the next ten years, however, most will be retirees ..., or “semi-retirees.”
- I. During the 1990s, our devolving urban industrial economies finally began to "re-invent" themselves, restoring their capacities to add unique competitive value to both residential and commercial markets. Revitalizing initiatives vary widely from jurisdiction to jurisdiction, but generally involve innovations in building and zoning codes, land use, utility regulations, transportation, tax incentives, community governance and public services, all of which offer opportunities for the development of new social technologies, including innovative planned communities in center cities, full-service condominiums, co-housing and mixed use residential-professional-commercial-recreational properties. Meanwhile, as young adults delay family formation, they will continue to swell a singles population that is creating a growing number of center city “urban villages” that have been instrumental to the revitalization of urban life.
- J. New immigrant communities have been instrumental to revitalizing center-city economies and neighborhoods all around America, and will continue to enrich the nation in multiple ways throughout the century, ultimately making the United States the world’s only true “poly-culture,” whose racial and religious make up will increasingly mirror that of the world at large.

III. MASS-MARKET DYNAMICS

- A. During the next three to five years, we will still be passing through a transitional low-point in our proportion of middle-income households. The gap between “haves” and “have-nots” in the U.S. will remain high by historic standards for another decade. This asymmetric distribution of income will sustain strong markets for luxury goods and services (e.g. second homes, exotic travel, specialty vehicles, cutting edge personal IT, cosmetic surgery, etc.) even as homelessness and hunger persist among the working poor, and millions of

workers continue to experience mid-career terminations due to the ongoing restructuring of the economy.

- B. The Web clearly possesses all of the necessary features to be a marketplace; it enables sellers and buyers to find each other, to agree on a price for a product or service, and to effect the payment side of the transaction. For a growing variety of products and services – e.g. music, movies, insurance, airline tickets, stocks, and postage stamps, etc. – the entire on-line transaction can be completed, and the purchase can be constructively received by the buyer. But, for the great bulk of consumer goods and services, the customer cannot immediately acquire his/her purchase over the Web; it must be delivered or fetched.
- C. E-tail sales in 2000 were less than 1/2% of America’s total retail sales; today, that figure is 3%. The logistics of delivering even 10% of the full array of common U.S. retail products would overwhelm the nation’s current fast-freight system. Many Internet purchases – e.g. air purifiers, snow-blowers, “Play-Stations,” etc. – won’t fit through most mail slots and cannot be safely left between the front door and the screen door. Similarly, the return of unwanted purchases poses a reverse logistics problem. Meanwhile, enhanced computer power and software will finally permit Internet purchases to be subjected to state and local sales taxes (2005-7), reducing one major advantage that online vendors have hitherto enjoyed over their brick and mortar competitors. Moreover, the physical act of shopping has become one of our most important cultural and social rituals, and a fundamental form of personal engagement in the community. Surveys suggest that most people worldwide are unwilling to abandon traditional retailing arrangements. In spite of this, most retailing experts estimate that by 2015, between 15% and 20% of all retail sales will take place on-line.
- D. Online retailing will begin to take its toll on America’s shopping malls, which were over-built during the 1990s. Merrill Lynch’s real estate division estimates that 18% of the Nation’s 2,900 malls are either under-performing or closed, while 300 of America’s 1200 enclosed shopping centers are expected to be redeveloped into “life-style centers,” incorporating a mixture of residential, commercial and office space designed to create an artificial urban living environment in America’s suburbs designed to appeal to singles and couples without children, especially “empty nester” Baby Boomers.
- E. The maturation of e-tail shopping is taking longer than most “experts” originally expected. Still, it IS taking place, and a variety of successful large-scale e-tail operations will arise – some sooner, some later – in the decade ahead. So-called “click & brick” combinations will become the most numerous on-line vendors. Big-time success in on-line victualing will come when most super-market products have “smart” bar-codes – “RFID” chips (see Paragraph G, page 9) – and at least 5% of homes are equipped with smart refrigerators and smart cabinetry, so that household info-structure is able to maintain an accurate inventory of everything in the pantry, in the medicine cabinet, the cleaning

closet, the supply cupboard and the work-room shelves **with absolutely no effort on the part of the householders**. This kind of wonderful domestic information capability will begin to be wide-spread around 2010-12.

IV. LIFE-STYLES OF THE STRESSED BUT HOPEFUL

By 2015, 15% to 20% of all retail sales will take place online. Both old-line firms and high-tech entrepreneurs will introduce a wide array of practical, Internet-potentiated innovations targeted to meet specific consumer needs. Among the more compelling of these markets will be:

- A. The growth of sequential careers and self-employment, plus the concomitant sharp reductions in the numbers of life-long jobs, will make a majority of Americans responsible for their own economic security, boosting the average household's utility for a wide range of electronic banking, financial management services and investment products. Congress will continue to evolve a "portable personal pension system" – IRA's, Keoh's, 401K plans, etc – to supplement Social Security. About 2/3 of all consumer/retail financial services will be mediated online by 2010.
- B. The 1990's surge in prosperity, combined with the declining numbers of crime-prone young adults in the population, has already led to dramatic declines in crime rates (a 35% drop in almost all types of crime from 1994 to 1999!). In the decade ahead, the growth of video-monitoring in public spaces and the widespread use of increasingly sophisticated personal and residential security systems will combine with rapid growth in the use of credit/debit/smart cards, Web-enabled cell-phones and PDA's to take the place of cash and further reduce rates of interpersonal crime.
- C. On the other hand, the rapid growth of electronic commerce on the Net will greatly increase electronic crime, including fraud, identity theft, and "cyber-tage." Computer viruses this year will cost businesses worldwide over US\$250 million; the average cost to business of malicious code was \$80,000 per incident in 2002. To reduce their exposure from cyber-tage, firms, public institutions and individual households will abandon proprietary software – especially Microsoft – in favor of open source software, principally Linux. Meanwhile, in response to marketplace demands for greater electronic privacy and data protection, on-line "data banks" will be created to protect and manage commercial and personal information that clients "deposit" in their computers, in much the same way that traditional banks manage and protect their customers' money.
- D. Market research on home-based workers reflects their higher than average propensity to access and use home electronic services – home banking and bill-paying, educational programs (K-12 and adult), shopping, recreation, E-mail, etc.

Together, home-based businesses and flex-place employment arrangements will foster consumer demands for sophisticated IT support for the home. The residential markets for office supplies and equipment already exceeds \$50 billion *p.a.*, and the number of households with two telephone lines has doubled from 25 to 50 million in the past ten years.

- E. By 2008, essentially all job search, application, screening and recruitment will be done online; newspaper “Help Wanted” sections will largely disappear by decade’s end. In a world of sequential careers, continuous up-skilling and non-traditional jobs, our personal Web-Sites will become our résumés. While many people will have their own personal trainers, career counselors or nutritional advisors in the decade ahead, many more people will employ Web-Masters to keep their sites modern looking, with state of the art features. (On-line, as in life, “first impressions are lasting impressions.”)
- F. Work-place restructuring has already provoked explosive growth in worker re-training and up-skilling, including learning delivered to homes via the Internet. There will be a burgeoning demand for instructional DVD’s, CD/ROMS and software, and both public and for-profit institutions will compete vigorously on-line and off to satisfy society’s needs for workplace training and post-secondary education. This market has already grown from \$50 to over \$100 billion *p.a.* in the past 10 years, including remedial education, vocational training and the elder hostel movement. By 2010, most employee training will be provided on the job, over the Internet, right at employee’s work stations. Meanwhile, contextual learning – e.g. intern and apprenticeships, public service projects, career academies, etc. – will have been widely adopted by secondary and post-secondary schools as mainstream teaching methods, **fostering a general integration of education and employment.**
- G. The aging of the population will increase consumer demands for home based medical care, including electronic health monitoring and diagnostics, (especially for millions of solitary seniors), at the same time that medical cost-containment efforts by government will promote home care as the most effective means of delivering health services in America. Telecom vendors, working with local care providers, will create electronic healthcare delivery systems – permitting consumers to create customized personal health regimens that combine the services of competing doctors, hospitals, pharmacists and therapists, etc., including both mainstream and alternative treatments.
- H. Americans spend fully 85% of their leisure time at home; the great bulk of that time is spent: [1] watching TV, [2] reading books and periodicals, [3] socializing with friends and families, and [4] online. Discretionary time spent online has increased dramatically over the past 36 months, resulting in corresponding declines in TV viewing hours. Over 150 million Americans have Web access, and tens of thousands more sign up every day. In August, 2000, the numbers of women online shot past the numbers of men, driven by an explosive increase in

the numbers of young women (12 - 24 year olds), and women over 65. (n.b. Since the surge in women online, there has been a rapid increase in the reported use of the Internet to “communicate with family members.”) Growing numbers of minorities are using the Internet as well, and by 2010, the population of cyberspace will largely reflect America itself. The principal mass market uses of the I-way include: sending e-mail (30%), and finding information (70%). Most sought-after information: [1] about health, diet, nutrition, drugs, [2] about jobs or employment, [3] about education, and [4] about recreation/hobby/leisure/travel.

- I. The fastest-growing recreational use of computers and the Web will be electronic games. For over one-half of children (ages 6 to 16) and one-third of young adults (aged 17-34) – both males and females – playing computer games is now reportedly the principal use of information technology. Beginning in 2005, game vendors will begin to add artificial intelligence and virtual personalities (“veepers”) to their products, which is expected to make computer games more realistic, and more intellectually and emotionally engaging. Computer games and simulations are also expected to become major instructional devices as well, **both** for students from pre-school to college, **and** for job-skill training. By 2010-14, entertainment industry experts expect the revenues from games and game-related merchandizing to surpass the revenues from movie, video and music sales, to become the principal recreational medium of the Information Society. Local communities will have professional teams of gamers as they now have sports teams.
- J. As mechanization and genetically-engineered crops continue to increase the productivity of U.S. farms, agricultural employment will continue to decline, but population in many parts of rural America is expected to grow robustly as increasing numbers of us elect to retire to rural areas of the country instead of moving to the “Sun Belt.” Specifically, the Census Bureau has identified 567 U.S. rural communities with populations of between 10,000 and 50,000 that are NOT within commuting distance of a large city, but which are growing faster than any other type of American community. Over 28 million of us – 10% of the U.S. population – currently live in these “micropolitan” areas, attracted by the low cost of living, low taxes and crime rates, and high quality of life offered by small town America.
- K. The revitalization of center-cities will afford similar opportunities for developers to work with local government and neighborhoods to create a comprehensive array of 21st Century info-com services and innovative transportation technologies to retrofit our 19th Century urban office and commercial space, and residential neighborhoods.
- L. The creation of an electronic marketplace goes hand-in-hand with the emergence of the inter-active consumer. Over 90% of all nationally traded products and services today display a public access “1-800” telephone number and 15% have

an 800 fax number to solicit customer input and questions. Customer Service sites on the Web will become more common than 1-800 numbers by 2010.

- M. The Web/Net hugely empowers consumers. When a disgruntled brick and mortar customer has an unhappy retail experience, he/she typically tells from one to ten other people about it; online, the same customer will tell 40 to 200 other people. Dissatisfied customers and abused employees have already set up over 8,000 “attack” Web sites vilifying specific firms or products. Now they are setting up attack Blogs to help them find like-minded individuals in cyber space with whom to organize demonstrations, boycotts, job actions or class-action law suits. The watch words for the electronic marketplace will include “caveat venditor,” as well as “caveat emptor.”

V. POST-INDUSTRIAL POLITICS

- A. A 2003 Gallup survey of American voters revealed that 47% of the U.S. electorate would prefer that significant government decisions be made by “subject matter experts” or “business leaders,” rather than “by politicians or the voters.” In focus group follow-ups with survey participants, two University of Nebraska political scientists found that “democracy either bores people silly or upsets them in a fingernails-across-the-blackboard way.” In their 2003 book, **Stealth Democracy**, professors John Hibbing and Elizabeth Theiss-Morse report that “people want democracy, but they just don’t want to see it. They don’t want to see debate. They don’t want to see compromise. They don’t want to see multiple issues dealt with at the same time.” Moreover, both the Gallup survey and the University focus groups found that most voters “expressed no desire to learn more about the issues, to get politically involved themselves, or to be kept more abreast of these issues.”
- B. On the other hand, the Nebraska researchers also found that 84% of their respondents desired “to claim more power for themselves through initiatives and referendums. What they told us,” the authors reported, “is that they still want those democratic mechanisms to be there in case there were to be a major issue that effected their lives.” Like the organizational philosophy in which management intervenes in day-to-day operations **only** when something goes wrong – called “management-by-exception” – these voters want to have “democracy-by-exception.” They are only interested in participating in the electoral process in response to government’s failure to satisfy their own specific personal needs or expectations.
- C. The Gallup/Nebraska U. findings help to explain the long-term decline in U.S. voter participation rates. They also mirror the conclusions of Johns Hopkins’ political science professors Matthew Cranson and Benjamin Ginsberg, whose studies of elections have led them to conclude that politicians – and their

handlers – no longer regard public opinion as a coherent collection of common causes and communities, but as a “swarm of disconnected individuals out to satisfy their personal needs in the political marketplace.” In their 2002 book, **Downsizing Democracy: How America Sidelined It’s Citizens and Privatized It’s Public**, professors Cranson and Ginsberg conclude that politicians – and the political process – now treat the electorate as “customers” rather than as “citizens.” In fact, Hibbing and Theiss-Morse found that nearly half the general electorate sees itself that way as well.

- D. The other half of the electorate still see themselves as “citizens, who belong to a political community with collective interests and public purposes.” These more traditional voters tend to be bound together by common long-term problems, and to support a standing political agenda. While the “customers” of government are typically activated by specific political issues – e.g. “Buy American” legislation, abortion, gay marriage amendments, etc. – “citizen” voters are more likely to be motivated to support long-term campaigns for social and economic justice, like universal health insurance, affordable housing, the living wage and “sanctuary city” movements. Of course, some issues, like the war in Iraq, energy deregulation and local anti-WalMart referenda, resonate with both groups of voters.
- E. To the extent that growing numbers of American citizens are coming to regard themselves as customers of the government they own, it is reasonable to expect them to behave more and more like customers, with little or no interest in the management of government – i.e. politics – so long as the government provides them the goods or services that each expects at a price each finds fair. As the owners of government, however, citizen-customers are entitled to seek changes through democratic – electoral – processes. Until the Internet, large permanent institutions – political parties, labor unions, chambers of commerce, etc. – were required to bring pressure on bureaucrats and legislators in support of specific causes, or to mobilize voters in support of a particular candidate or ballot initiative. But, as California’s gubernatorial recall and Howard Dean’s 2004 presidential campaign have amply demonstrated, the Internet has the potential to make political parties obsolete, and to make our political environment much more spontaneous ..., and unpredictable.
- F. The rise of cyber-populism also means that the leadership of both private and public sector enterprises will increasingly be confronted by the *on-line media* – Webcasts, Blogs (interactive editorials), and NetNews services using input from any and every source, including ordinary citizens – neighbors, employees, customers, and constituents, etc. – to produce on-line news programs that a growing number of young adults worldwide are choosing to watch and believe in place of the traditional broadcast, cable and print media; the Web news is the ultimate “reality TV!” The cyber-populists will also be active promoters of the worldwide political movement to require complete **transparency** in all private and public transactions and decision-making. The cyber press will seek to

demonstrate the need for institutional transparency by recruiting ordinary people to serve as “investigative reporters,” to gather proof of illicit, unethical, and unsavory institutional activities, much as the Web press were the first to publish the photos of prisoner abuse at Abu Ghraib and chicken abuse in West Virginia.

The Internet will empower consumers, constituents and the society at large beyond the dreams of Karl Marx and Ralph Nader. The interactivity and ubiquity of the Web offers the capacity to establish entirely new kinds of relationships between public and private enterprises and the people they serve. The great challenge for the leadership of every institution will be to make that relationship constructive, collegial and collaborative. Organizations that have not already established an open on-line dialogue with their clientele are already losing ground. Your constituents and customers are eagerly exploring the possibilities of cyberspace, and you really shouldn't let them do it without you. You want to make sure that this new relationship gets off on the right foot.

THE U.S. LABOR FORCE - 2000 TO 2015

| BLS Category | NUMBER OF WORKERS IN MILLIONS | | CHANGE (MILLIONS) | PERCENT CHANGE |
|--------------------|----------------------------------|-------|----------------------|-------------------|
| | 2000 | | 2000-2015 | 2000-2015 |
| Total Labor Force | | | | |
| age 16+ | 140.9 | 167.2 | 26.3 | 18.7% |
| Male Labor Force | | | | |
| age 16+ | 75.2 | 85.9 | 10.7 | 14.2% |
| Female Labor Force | | | | |
| age 16+ | 65.6 | 81.3 | 15.5 | 23.9% |
| AGE | | | | |
| Under 25 | 22.7 | 26.7 | 4 | 17.6% |
| 25-34 | 31.7 | 36.3 | 4.6 | 14.8% |
| 35-44 | 37.8 | 35.1 | -2.7 | -7.1% |
| 45-54 | 30.5 | 35.7 | 5.2 | 1.7% |
| 55-64 | 14.0 | 24.9 | 10.9 | 77.9% |
| 65+ | 4.2 | 8.5 | 4.5 | 102.4% |

Source: Bureau of Labor Statistics

THE DEMOGRAPHIC DECADE AHEAD

A Slower-Growing, Older, More Diverse U.S. Workforce

| | <i>2000</i> | <i>2015</i> |
|---------------------------------|--------------|--------------|
| workforce under 25 | 25.6% | 15.9% |
| workforce over 55 | 12.9% | 19.9% |
| workers that are men | 53.5% | 51.5% |
| workers that are women | 46.5% | 48.6% |
| African-American workers | 11.8% | 12.9% |
| Hispanic workers | 10.9% | 13.7% |
| other minority workers | 2.0% | 4.0% |

THE CHANGING AMERICAN WORKFORCE - 2002 TO 2012

| OCCUPATION | EMPLOYMENT (1,000's) | | % of Total Employees | | GROWTH | |
|--|-------------------------|----------------|----------------------|--------------|---------------------|--------------|
| | 2002 | 2012 | 2002 | 2012 | Number (1,000's) | % Change |
| Total - Labor Force | 144,900 | 162,300 | 100.0 | 100.0 | 17,400 | +12.0 |
| Total - All Occupations | 144,014 | 165,319 | 100.0 | 100.0 | 21,305 | +14.8 |
| Management | 10,056 | 11,277 | 7.0 | 6.8 | 1,221 | +12.1 |
| Business & Financial Workers | 5,445 | 6,606 | 3.8 | 4.0 | 1,162 | +21.3 |
| Professional Workers | 27,687 | 34,147 | 19.2 | 20.7 | 6,459 | +23.3 |
| Service Workers | 21,084 | 25,519 | 14.6 | 15.4 | 4,435 | +21.0 |
| Sales Workers | 15,260 | 17,231 | 10.6 | 10.4 | 1,971 | +12.9 |
| Office & Administrative Support Workers | 23,851 | 25,464 | 16.6 | 15.4 | 1,613 | +6.8 |
| Construction Workers | 6,780 | 7,937 | 4.7 | 4.8 | 1,157 | +17.1 |
| Production, Farming & Mining Workers | 12,842 | 13,170 | 8.9 | 8.0 | 328 | +2.6 |
| Transportation & Materials Moving | 9,828 | 11,111 | 6.8 | 6.7 | 1,282 | +13.1 |
| Business Services | 11,181 | 12,858 | 7.8 | 7.8 | 1,677 | +17.1 |

Source: U.S. Bureau of Labor Statistics, DOL
February 11, 2004

15 INDUSTRIES WITH 90% OF NEW JOBS - 2002 TO 2012

THE 15 U.S. INDUSTRIES WITH LARGEST EMPLOYMENT GROWTH (2002 TO 2012)

| INDUSTRY | JOBS (in thousands) | | GROWTH (in thousands) 2002-2012 | % GROWTH 2002-2012 |
|---|------------------------|---------|---------------------------------------|-----------------------|
| | in 2002 | in 2012 | | |
| 1. Education | 12,527 | 15,016 | 2,489 | +19.9 |
| 2. Retail Trade | 15,047 | 17,129 | 2,082 | +13.8 |
| 3. Ambulatory Healthcare | 4,634 | 6,532 | 1,898 | +41.0 |
| 4. Professional Scientific and Technical Services | 6,715 | 8,579 | 1,864 | +27.8 |
| 5. Employment Services | 3,249 | 5,012 | 1,763 | +54.3 |
| 6. Eating & Drinking Establishments | 8,412 | 9,749 | 1,337 | +15.9 |
| 7. Construction | 6,732 | 7,745 | 1,013 | +31.6 |
| 8. Finance, Insurance and Banking | 7,843 | 8,806 | 963 | +12.3 |
| 9. Nursing and Residential Care | 2,743 | 3,685 | 942 | +34.3 |
| 10. Transportation and Warehousing | 4,205 | 5,120 | 915 | +21.7 |
| 11. Social Services | 2,004 | 2,917 | 913 | +45.6 |
| 12. State & Local Government | 7,851 | 8,610 | 759 | +9.7 |
| 13. Hospitals | 5,148 | 5,809 | 661 | +12.8 |
| 14. Wholesale Trade | 5,641 | 6,279 | 638 | +11.3 |
| 15. Religious, Civic and Non-Profit Orgs. | 2,861 | 3,460 | 599 | +21.0 |
| TOTALS | 95,612 | 114,448 | 19,436 | +20.3 |
| Totals for All U.S. Industries | 144,014 | 165,319 | 21,305 | +14.8 |

Source: U.S. Bureau of Labor Statistics

www.bls.gov/emp

THE OUTLOOK FOR BUSINESS AND EMPLOYMENT

2005 TO 2015

Six Scenarios of the Trans-Millennium

Adapt and Survive – 10-year multifactor scenario of the future US/global business operating environment produced by a "Panel Survey" of 180 expert forecasters; conducted by the Global Futures Forum consultancy; published by GFF, December 2003.

The Future of Work, by Thomas W. Malone – an open-ended multi-factor extrapolation of long-term trends in the organization of work, and the features of employment and job design in the U.S.; published by Harvard Business School Press, 2004.

The 21st Century at Work: Forces Shaping the Future Workforce and Workplace in the United States – a multi-factor scenario produced by the RAND Corporation for the U.S. Department of Labor, describing how the most probable demographic, economic and technologic realities are expected to alter where, how and by whom work will be done in America over the next 15 years; published by the RAND Corporation, 2004.

Working in America: A Blueprint for the New Labor Market, by Paul Osterman, *et al.* – a projection of new institutions that are emerging to compensate for the decline/loss of industrial era social technologies, including labor unions, health insurance and pensions; published by MIT Press, 2001.

The Substance of Style: How the rise of aesthetic value is remaking commerce, culture and consciousness, by Virginia Postrel – an assessment of how IT is reducing the costs and increasing the variety of fabrication and design capabilities and of individually customized products and services – giving rise to rapidly growing employment in aesthetic services, ranging from plastic surgery and cosmetology to architectural and interior design, landscaping, graphics, gaming and film-making, while promoting diversity in food, music and clothing, commercial and residential décor and structural style, and employing millions of people who are being made redundant by automation and globalization; published by Harper Collins, 2004.

The New Division of Labor: How Computers Are Creating the Next Job Market, by Frank Levy, Professor of Urban Economics at MIT, and Richard Murnane, Thompson Professor of Education and Society at Harvard – an open-ended future scenario based on an analysis of trends in job content; identifying classes of employment that are likely to be [1] made redundant by automation/information, [2] lost to foreign competition, [3] off-shored, and [4] retained by the U.S. domestic economy; published by Princeton University Press, January 2004.