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California Economic Outlook

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Executive Summary

° The $8.8 trillion U. S. economy remains hot, without any real signs of inflation. Early in the year 2000 the U. S. will enter its longest economic expansion ever!

° What is truly remarkable about this story is the coexistence of rapid economic growth, low inflation, and low levels of unemployment. For most economists such harmony between growth, prices, and unemployment was unthinkable only a few years ago.

° The national economy has never gone this long without rising inflation and interest rates. Since 1991, when the last recession ended, the economy has grown at an average rate of 3.5% with 1997, 1998, and 1999 exhibiting GDP growth of 4% or above.

° We expect the economy to slow down a bit in 2000Ñ real GDP growth of 3.5%, still an impressive performance! The slowdown we believe will result from a rate increase around February 2000 to cool down the sizzle in the economy.

° In addition to possible Fed action, there are other reasons for a slowdown: 1) cutbacks in high-tech investment in the first half of 2000 in light of the enormous spending by business on the Y2K fix in 1999 and 2) less robust "wealth effect" because of some leveling in the stock market after its spec-tacular run for the past three years.

The U. S. Economy:
Executive Summary

What is truly remarkable about this story is the coexistence of rapid economic growth, low
inflation, and low levels of unemployment.

U. S. Unemployment and Employment Rates
1991-1999 (% change)

° Undoubtedly the course of the stock market is key to sustaining the current expansion. The Fed will once again have to do a tight rope act allowing the stock market to climb to unsustainable heights or puncturing the balloon too suddenly and letting the economy and the market collapse into a recession.

° For most Americans (not all) these are the best of times. In the second half of 1999, the remarkable U. S. job machine continued to create an average of 230,000 jobs per month. In 2000 U. S. non-farm employment is expected to grow at a rate of 1.6%, down from the 2.2% rate in 1999.

Growing Influence of Technology Stocks
Basis of "Wealth Effect"

Productivity and Computer Use (1994-1999)
A Major Success Factor 8

° The key to success of the current expansion has been continued growth in productivity, which in turn has helped contain inflation while allowing healthy business profits as well as respectable wage gains. Strong productivity gains are a result of enormous investments in information technology in the last decade. The important story here is that we are finally seeing the tangible benefits of the New Economy 1 on a macro scale.

° One of the indirect consequences of the New Economy has been a widening income gap. Those who work in the computer/ telecommunications/ internet related businesses are doing very well, and those who are in the Old Economy industries such as machine tools, food processing, grocery stores, daycare, etc. are not doing as well. The reason large productivity gaps between the two economies!

° There has been a recent slowdown in housing starts as well as sales because of higher mortgage rates. We expect housing starts in 2000 to be the 1.5 million unit level.

° In the international trade front things are beginning to look up for U. S. exports as the Asian economies stage a recovery, and European economies become stronger.

One of the indirect consequences of the New Economy has been a widening income gap. Those who work in the computer/ telecommunications/ Internet related businesses are doing very well

1 The New Economy includes industries such as computer hardware and software, electronics, semiconductors,
telecommunications, multimedia, the Internet, the bio-sciences, environmental technology and high-tech entertainment

E-Commerce Reduces the Cost of Doing Business and Raises Productivity
Estimated Savings from Business-to-Business E-Commerce

The California Economy: ° Nowhere has the New Economy manifested itself better than in California.
It has made a successful transition from an economy dependent on aerospace and defense contracting to a world class knowledge and information-based economy.

° The statistics of recovery and expansion are impressive. Since 1993, when the recession ended, the state has created 2.1 million new jobs. Unemployment is down to

4.9% from a high 9.3% during the recession. Personal income is up by more than 52%, from $640 million in 1991, to nearly a trillion dollars in 1999. On a per capita basis this is an increase of nearly 30% between 1991 and 1999.

Investment in Business Equipment, U. S.
A Key Factor Underlying Productivity Growth 1976-1999

Nowhere has the New Economy manifested itself better than in California. It has made a successful
transition from an economy dependent on aerospace and defense contracting to a world class knowledge and information-based economy.

Nonfarm Employment Growth
California Ahead of the U. S.
Annual Percentage Change

° All this has been possible because of the state's transition to the New Economy that is based on industries such as computer hardware and software, telecommunications, semiconductors, biotechnology, medical technology, and the Internet.

° Almost all the regions of the state will experience higher than average incomes, but distribution of income by region will be uneven. The income gap between the San Francisco Bay Area and the rest of California will continue to widen in the next several years. This is primarily a result of the Bay Region's sizzling e-economy.

° Payroll employment in the state continued to grow in October 1999, when it set a new record high for the 42nd consecutive month, gaining 26,000 jobs for the month to reach a total of 14,065,600.(According to a household survey the state reached a total of 15,838,000 jobs at the end of October 1999).

° Manufacturing, particularly high-tech manufacturing, has been a weakness in the state economy in 1999 caused by the ongoing slump in export sales to Asia. But things are turning around in Asia, and as a result California exports to the region grew 19% during the third quarter of 1999. We expect this trend to continue in 2000 and beyond with continued recovery in Asia.

° The services sector continues to provide the largest share of California's new jobs. This trend will continue in 2000 and beyond. Of the 454,000 non-farm jobs that the state added in 1998, more than 43% were created in the services sector.

° Within the services sector, job growth has increasingly occurred within the business services sub-sector. In 1998, business services jobs were the main

factor underlying services job creation, adding 91,900 out of 194,200 services jobs, or 47% of total services jobs.

High Technology Employment Leading States California is Number 1
Number of Jobs by State, 1999

Almost all the regions of the state will experience higher than average incomes, but distribution
of income by region will be uneven. The income gap between the San Francisco Bay Area and the rest
of California will continue to widen in the next several years.

° Job growth in the state is expected to slow down a bit in 2000 from 2.8% in 1999 to 2.7%. This slowdown is consistent with the national economic picture, and in addition there are bottlenecks within the state. These include a shortage of qualified workers and a shortage of affordable housing. Home prices in the premier coastal California regions (San Francisco, Los Angeles, and San Diego) are significantly higher than in the rest of the nation.

° We expect new housing permits in California to reach 175,000 in 2000, up 10% from the 1999 estimate of 155,000. Between 1970 and 1990, annual housing starts in California averaged 200,000. California's housing industry is still playing catch-up to pre-1990s level of home building.

California Regions: ° Our report takes a look at the four major economic regions of California:

1) The San Francisco Bay Area (nine counties); 2) the Los Angeles Area (five counties); 3) The Central Valley (nineteen counties); and, 4) The San Diego Region (one county).

° Some general conclusions for the 1993-1998 period are: 1) San Diego and the San Francisco Bay Area were the number one and number two job growth regions in the state reflecting their "New Economy" base. 2) These two regions were also tied for first place for services job growth, again a reflection of their high-tech base. 3) In terms of new manufacturing job creation, San Diego was clearly in the lead followed by Los Angeles, the Bay Area, and the Central Valley. 4) In terms of total number of new jobs created in the period, the ranking for the regions was # 1 Los Angeles, # 2 Bay Area, # 3 Central Valley, and # 4 San Diego. These rankings reflect population size as well as the size of the respective regional markets.

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California Employment Changes by Industry
Services Sector Continues to Dominate
Year-Over-Year Differences Between 1998 and 1999 (thousands) **Total Venture Capital Financing in Silicon Valley Ð**
A Key to Success 1990-1999* (billions)

° Between 1995 and 1999, job market strength moved from the North to the SouthÑ Santa Clara and San Francisco counties were leaders in job creation in the 1995-97 period; Sacramento and Alameda counties joined the high-tech job creation club of Silicon Valley in 1996; by 1997 job market strength had moved south to San Diego, Riverside/ San Bernardino and Orange counties; in 1999 the job market strength is in parts of the Central Valley and Southern California.

° Statewide job growth leaders in 1999 2 were Riverside/ San Bernardino, and Ventura counties in Southern California; Fresno, Kern, Sacramento, and Tulare in the Central Valley; Sonoma, Solano, Alameda, and Contra Costa in the Bay Area, and Monterey county on the coast.

Annual Growth (%) of Average Wages and Jobs in Silicon Valley
Slowdown in Job Growth: Higher Job Quality

Between 1995 and 1999, job market strength moved from the North to the South

° It is important to note that Santa Clara, the home county for Silicon Valley, had a job growth rate of only 0.7% for 1999. A clear reflection of the impact of the Asian crisis on Silicon Valley high-tech exports.

° Although the pace of construction employment in 1999 in California was slower than what it was in 1998, it still was the fastest growing industry in 1999 with employment growth of 9%. Between 1998 and 1999 construction jobs in Ventura county grew at a torrid pace of 21.5%; in Los Angeles county by 6.4% Orange county by 7.7%; in Riverside/ San Bernardino by 9%.

° Services have been the largest job creators in California for many years. Within this broad category, "Business Services" 3 have been the dominant job creating industry in the Coastal Metro areas of CaliforniaÑ The Bay Area, the Los Angeles Area, and San Diego. Between 1998 and 1999, on a statewide basis business services jobs grew at rate of 7.7% compared to overall state job growth of nearly 2.5%.

2 annualized on the basis of January through October 1999
3 Activities in this category of jobs range from the development

of computer software products and services, to
advertising and marketing, temporary office services,
equipment rental and leasing, reproduction, mailing and
multi-media services

Silicon Valley and U. S. Average Per Employee Wage, 1999
Strength in New Economy is the Difference, Dollars

° Although the business services sector in California includes some lower wage jobs, more than half can be classified as part of the higher paying knowledge and information economy jobs that include computer programming, software development, and information technology services.

° Despite traffic gridlock and high home prices, the nine county San Francisco Bay Area economy continues to hum along. We have never seen prosperity at the current levels in this region. The story of the region's economic well being can certainly be measured by the billion dollar e-fortunes being made in Silicon Valley and the East Bay. A broader social gauge of economic wellness was evident in the region's unemployment level in October 1999. San Francisco MSA had an amazingly low 2.1%, Oakland MSA (Alameda, Contra Costa counties) at 2.9%, and San Jose at 2.5%.

° The strength of the East Bay (Alameda and Contra Costa) economy has been impressive. It is undoubtedly the fastest growing sub-region of the Bay Area with a highly diversified economy that includes a strong manufacturing base as well as a growing presence of high-tech industries such as telecommunications, software, the Internet, multi-media, medical technology, and biotechnology.

° In a recently completed study prepared by Munroe Consulting Inc. for distribution at the Oakland Technology Summit, the existence of over 300 high-tech companies scattered throughout the city of Oakland was confirmed.

Silicon Valley Average Per Employee Wage
Software Leads Hi-Tech Industries, 1998

Most Valuable Bay Area IPOs of 1999 Basis of New Wealth
Market Value in Millions at the Close of Trading January 5, 2000 15

° The May 1999 issue of Forbes magazine after evaluating 162 metro regions on the basis of economic growth and technological progress concluded that the Bay Area is the technology hot-spot of the U. S. with East Bay as its emerging leader.

Silicon Valley IPOs and M& As, 1990-1999 Dominant New Economy Trends

Transition to the New Economy

Concluding Remarks: Looking ahead to the year 2000, we see continued prosperity in the U. S., in
California and the various regions of the state. Income and jobs will continue to grow at a respectable clip. Inflation will remain low. Modest increases in interest rates are likely in the New Year given the Fed's concern about consumer as well as stock market exuberance. Adequate supply of housing, shortages of qualified workers and traffic problems will continue to be the key issues in California coastal metro areas in 2000 and beyond.

The key to sustaining the "inflation-less prosperity" in the next few years and beyond will depend on continued maintenance of productivity growth in the economy with steady investment in information technology as well as in human capital. We are not implying that there will not be another recession in the future. It is, perhaps, inevitable that a major external shock (like the 1974 oil crisis, or the 1990 Persian Gulf war) or a serious mistake by the Fed may trigger another recession for our seemingly unsinkable economy.

Income and jobs will continue to grow at a respectable clip. Inflation will remain low. Modest increases in interest rates are likely in the New Year

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key issues in California coastal metro areas in 2000 and beyond.

Regional Employment Growth Forecast
Four California Regions and the State. Non-farm Employment Ð 1998 to 2000
1998 1999-2000
California 3.5% 2.8% 2.3%

Bay Area 3.2% 2.3% 2.1%
Central Valley 3.0% 2.8% 2.4%
Los Angeles Region 3.0% 2.8% 2.3%
San Diego Region 4.4% 2.2% 2.0%
Note: e Ð estimate; f Ð forecast Source: EDD

U. S. Forecast Summary
1998 1999(e) 2000(f)
Real GDP (%) 4.3 4.0 3.5
CPI (%) 1.6 2.2 2.3
PPI (%) -0.9 1.9 2.3
Unemployment Rate (%) 4.5 4.2 4.1
Employment Growth (%) 2.6 2.2 1.6
Fed Funds Rate (%) 5.35 5.0 5.7
Thirty Year Mortgage Rate (%) 6.95 7.4 7.9
Housing Starts (million) 1.623 1.67 1.5
Note: e Ð estimate; f Ð forecast Source: UCLA Anderson Munroe Consulting Inc.

° The $8.8 trillion U. S. economy remains hot, without any significant signs of inflation. Even three consecutive interest rate increases by the Fed in the second half of 1999 did not slow down the expansion. Early in year 2000 the U. S. economy will break the record for the longest expansion ever. Since 1991 the economy has grown at an average rate of 3.5%, with 1997 and 1998 exhibiting real GDP growth of over 4%. The national economy has never gone this long without rising inflation and interest rates. The absence of inflation provides us with considerable optimism about sustaining the current expansion in 2000 and beyond.

° For most Americans (not all) these are the best of times. Jobs are plentiful and the mix of jobs keeps improving. The U. S. economy has continued to create jobs at a healthy clipÑ an average of 230,000 jobs a month in the second half of 1999. It was not surprising to see the unemployment rate at 4.1%Ñ the lowest it has been since January 1970. (Fig 1.1) Tight labor markets allow lower paid workers to move into better paying businesses and occupations. In 1999 real GDP growth rate was nearly 4%. The economy is expected to slow down a bit in 2000 with GDP growing at a 3.5% rate 4 Ñ still a strong economy.

Good Times Continue Ð The New Economy Makes It Possible
I. U. S. Economy

For most Americans (not all) these are the best of times. Jobs are plentiful and the mix of jobs keeps improving. The U. S. economy has continued to create jobs at a healthy clipÑ an average of 230,000 jobs a month in the second half of 1999.

Figure 1.1 U. S. Unemployment and Employment Rates
1991-1999 (% change)
4 A recent revision in the framework of national income accounting has not fundamentally altered the recent
record of the economy. The key changes in the measurement system include 1) moving the base year from 1992
to 1996, 2) business spending in software has been made part of the investment information processing equipment
(software was considered an input to other production rather than a finished good). Both of these changes make
good sense. Counting of software as an output is a sign of acceptance of the realities of the New Economy on the
part of the Bureau of Labor Statistics (BLS). This is the first tangible recognition of the New Economy by U. S.
government statisticians. These modifications will add nearly $140 billion to real GDP for 1999. GDP growth rates
will be higher as a result of rebasing and counting of software as a final product. 18

° American consumers may finally be slowing down somewhat. However, consumer confidence remains high and we expect consumer spending to grow at a rate of nearly 4% in 2000 compared to over 5% in 1999. Behind the consumer spending spree lies the "wealth effect". For the past several years, Americans have continued to feel and act richer because of the rise in their net worth resulting from the robust stock market that started in 1994. An additional factor has been the positive impact of higher home prices on household net worth in many parts of the U. S. Home price escalation has been particularly strong in the high tech regions of the country such as the San Francisco Bay Area, Seattle, Boston, Austin, and Research Triangle (North Carolina). In addition a large number of homeowners have been able to reduce their mortgage payments via refinancing at lower rates in 1998 and in the first half of 1999. This has increased household liquidity that in turn has meant greater activity in the outlet malls as well as Web shopping.

° Third quarter 1999 consumer price data showed a slight increase in the CPI as a result of higher oil prices. But this was not a problem for the economy and 1999 CPI remained at a very modest 2.2%. We see inflation remaining almost flat at 2.3% in 2000. This certainly bodes well for the longevity of the current economic expansion.

° Undoubtedly strong productivity growth has contained inflation while allowing for strong business profit levels as well as respectable wage gains. Strong productivity gains are a result of enormous investments in informa-tion technology in the past decade. The important story here is that we are finally seeing the tangible benefits of the New Economy on a macro scale. Only a few years ago most economists would have dismissed the possibility of 3% to 4% real GDP growth rate coexisting with 4.1% unemployment and 2% inflation. The economics profession in general has underestimated the performance of the economy consistently for the past several years. This is perhaps another indication of slow acceptance by the profession of the fundamental structural changes that are embodied in the New Economy.

° Average annual productivity growth for the decade of the 1990s was previ-ously estimated to be at 1.5%. This has now been revised upward to 2% by the Bureau of Labor Statistics. The last four years have been really impressive with an annual productivity growth rate of 2.5%. Basically what this suggests is that the New Economy has been evolving since the early 1980s when businesses started investing heavily in information technology, hardware and software.

Undoubtedly strong productivity growth has contained inflation while allowing for strong business profit levels as well as respectable wage

gains. Strong productivity gains are a result of enormous investments in information technology in the past decade

° Higher productivity growth allows a higher "speed limit" (the growth rate beyond which inflation becomes a problem for the economy). (Fig. 1.2) In the 1980s the "speed limit" was considered to be an economic growth rate of 2.3%. In view of "productivity optimism" the bar can now be raised to 3% or even 3.5% in light of the fact that information technology continues to play an ever increasing role in business and consumer spending. Information technology is approximately 6% of the economy, but has produced nearly 35% of the economic growth in the past five years.

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° The productivity "stars" in the U. S. economy are the computer and semicon-ductor industries with annual gains in the 25% range for the last several years. (Fig. 1.3) Some industries that still make the same things, such as textiles, tires, household appliances and aircraft, have attained annual productivity growth rates of nearly 4% mostly by slashing costs. Productivity growth in the remain-ing manufacturing industries has been in the 2.5 % range. Industries that are trailing in the productivity race include food stores (0.9% a year between 1989 and 1997), small retailers, hotels, motels, restaurants, basic chemicals, furniture makers and car dealers 5 .

Figure 1.2 Investment in Business Equipment, U. S. 1976-1999

5 Between 1995 and 1999 there has been an increase of 80,000 employees in car dealerships across the U. S. In the same period employment in auto manufacturing has declined by 15,000. Based on economy-wide trends rang-ing from internet based sales to continued cost cutting, it is very likely we will see restructuring and consolidation in car dealerships across the U. S.

Figure 1.3 Productivity and Computer Use (1994-1999)

° The Internet is the fastest growing communications technology in history. It surpassed the telephone last year with 3 billion e-mail messages a day. On a worldwide basis we expect nearly 500 million Internet users by 2003. Business-to-business e-commerce will continue to streamline complex business processes, lower business costs and improve productivity. In addition, devel-opment of online auctions will continue to result in greater competition in pricing. Electronic auctions may be the most valuable innovation resulting from the Internet.

° The U. S. stock market has continued to set records in the past several years, with 1999 marking the fifth year in a row that the market has provided above-average

returns. The year-end Dow Jones Index closed over 11,000. The factors underlying this remarkable performance include declining inflation and inter-est rates, improvements in corporate profits as well as less volatility in profits, and the rise of the New Economy. The technology rich NASDAQ index rose by 50% in 1999. (Fig. 1.4) Since the end of the last recession in 1991, the index has risen annually by 56.8%, 15.5%, 14.7%, fallen by 3.2%, risen 36.9%, 22.7%, 21.6% and 39.6% in each of the years between 1992 and 1999. The NASDAQ has outperformed the S& P500 Index six of the past nine years including 1999. The Morningstar mutual fund rating service reported that of 1,958 diversified stock funds in 1999, more than 670 beat the S& P 500 index, and nearly all of them had more than 5% in tech stock holdings.

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last year with 3 billion e-mail messages a day. On a worldwide basis we expect nearly 500 million Internet users by 2003.

Figure 1.4 Growing Influence of Technology

° One of the effects of the New Economy has been a widening income gap. Those who work in the New Economy industries are doing very well, while those in the Old Economy (non-high-tech manufactured goods and labor-intensive services) industries such as machine tools, food processing, grocery stores and daycare, are not doing as well. The reason is the large productivity gap between the two economies. Real wage growth in the New Economy has been over 11% compared to 3 % for the Old Economy between 1994 and 1999. The next recession, whenever that comes, will hit the Old Economy workers hardest.

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Economy industries are doing very well, while those in the Old Economy (non-high-tech manufactured goods and
labor-intensive services) industries such as machine tools, food processing, grocery stores and daycare,
are not doing as well.

° Housing starts in 1999 have remained at the 1.6 million rate. (Fig 1.5) There has been a recent slow-down in housing starts as well as sales because of higher mortgage rates. (Thirty-year rates climbed from an average of 7.2% in the second quarter to 7.9% in the fourth quarter of 1999). We expect housing starts in 2000 to be at the 1.5 million unit level.

Figure 1.5 U. S. Housing Starts (millions of units) 1991-1999

Figure 1.6 World Export Leaders ($ billions) 1999

° International trade is beginning to look up for U. S. exports as the Asian economies stage a recovery, and European economies strengthen. The weaker dollar will also help in boosting exports. The insatiable appetite of the American consumer for imports continues to repeat the familiar pattern where imports grow faster than exports. This is despite the fact that the U. S. is the world's biggest exporter ($ 682 billion in 1998) with Germany ($ 540 billion) and Japan ($ 388 billion) the second and third largest exporters. (Fig. 1.6) In 1999 export growth was at a rate of 3.6% compared to over 12% in imports. We are likely to see narrowing of the gap in growth rates of exports and imports in 2000, but not surprisingly once again import growth will continue to top growth in exports. Trade deficit in 2000 is expected to exceed $410 billion, compared to nearly $335 billion in 1999.

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What Could Derail the Current Expansion? ° A recession scenario sequence for 2000: 1) Consumers continue on their
spending binge and the economy heats up; 2) the labor market tightens further and wages rise; 3) combination of a tight labor market and strong consumer demand fuels inflation and the CPI rises above 4% by mid 2000; 4) in response the Fed raises the fed funds rate to 6.0% by the fall of 2000; 5) the stock market slides by more than 20%, and consumers, feeling poorer,
stay away from the malls and car dealer show rooms; 6) the economy slides into a recession as a result of delayed policy response by the Fed. The chance of this scenario being realized is quite slim in light of the excellent track record of the Fed. In other words, it is very unlikely that we will see a recession in 2000 barring external shocks or a major policy snafu.

° The key to sustaining the "inflation-less prosperity" in the long term depends on continued maintenance of productivity growth in the economy with steady investment in information technology as well as human capital. We are not implying that there will not be another recession in the future. It is, perhaps, inevitable that a major external shock (like the 1974 oil crisis,
or the 1990 Persian Gulf war) or a serious mistake by the Fed may trigger another recession for our seemingly unsinkable economy.

Table 1.1 U. S. Forecast Summary

	1998	**1999(e)**	**2000(f)**
Real GDP (%)	4.3	4.0	3.5
CPI (%)	1.6	2.2	2.3
PPI (%)	-0.9	1.9	2.3
Unemployment Rate (%)	4.5	4.2	4.1
Employment Growth (%)	2.6	2.2	1.6

Fed Funds Rate (%) 5.35 5.0 5.7
Thirty Year Mortgage Rate (%) 6.95 7.4 7.9
Housing Starts (million) 1.623 1.67 1.5
Note: estimated forecast Source: UCLA Anderson Munroe Consulting Inc.

° According to the California Employment Development Department's survey of employers, payroll employment in California continued to grow in October 1999, when it set a record for the 42nd consecutive month, gaining 26,000 jobs to reach a total of 14,065,600.

° According to the separate survey of households, the number of people with jobs in the state increased by 63,000 between September and October 1999, reaching a statewide total of 15,838,000 and setting a record, for the tenth consecutive month.

° California's job creation has been so consistently strong in recent years that it is easy to forget the state was hit harder than the nation by the 1990-93 recession. The national recovery began in the second quarter of 1991, more than two years before the state began its recovery. By 1996, however, California had passed the U. S. in job creation and has not relinquished that lead since. Job growth is expected to slow a bit in California in 2000. (Fig. 2.1) The key reasons are shortages of qualified workers in the state and affordable housing in the prime high technology regions. The problem is especially critical in
high-tech regions such as the San Francisco Bay Area and to a lesser degree in San Diego and Orange County. The other reason for a state slowdown is a slower U. S. economy in 2000.

° California's share of total U. S. employment, which hit a 1990s low of 10.6% in 1995, is expected to rise to 11.1% in 2000. Population trends have also been a factor in this rising share. (Fig. 2.2) California's population has grown faster than that of the U. S., and partly a result of in-migration of working-age adults.

A. The Great Job Machine Ð California Continues to Lead the Nation in Job Growth Ð Slight Slowdown in 2000

II. The California Economic Outlook

Job growth is expected to slow a bit in California in 2000. The key reasons are shortages of qualified workers in the state
and affordable housing in the prime high technology regions.

Figure 2.1 Nonfarm Employment Growth
annual percentage change

° Manufacturing, particularly among high-tech firms, has been a weakness in the California economy this year, caused largely by the ongoing slump in export sales to

Asia. The state has lost about 10,000 jobs in the durable manufacturing sector. However, the losses nearly halted in the third quarter of 1999, and the prognosis should improve with the recovery in Asian economies. One sign of this recovery is that California exports to Asia grew 19% during the third quarter and are expected to continue to expand in 2000. Exports overall increased 10%, with healthy gains in sales to some European countries. These trends bode well for job growth in manufacturing in California in 2000.

° The only manufacturing sectors exhibiting job growth were those related to home building (lumber, wood, household furniture and fixtures), and chemicals as a result of gains in the pharmaceutical industry.

Manufacturing, particularly among high-tech firms, has been a weakness in the California economy this year, caused largely by the ongoing slump in export sales to Asia. The state has lost about 10,000 jobs in the durable manufacturing sector.

Figure 2.2 California Employment as a Percentage of U. S. Employment (1998 job levels (millions): U. S. 125.8, CA 13.6

° California lagged the nation in recovering from the early 1990s recession not only in job growth, but also in output growth. (Fig. 2.3) By 1997, gross state product was growing faster than the nation's output as the state restructured its economy from aerospace to computers, software, and the Internet. This trend continued in 1998 and is expected to continue into 2000. Output growth in California in 2000 will be slower because of a national slowdown.

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B. California's Share of U. S. Output is Rising

° As state GSP has grown faster than U. S. GDP since 1997, the state's share of U. S. real GDP has steadily grown. (Fig. 2.4) However, its share still has not returned to the level of the early 1990s. However, the state's output then contained a larger share of big-ticket defense items, such as jet airplanes, that added to state GSP.

Figure 2.3 Growth (%) in Real U. S. Gross Domestic Product and California Gross State Product, 1990-2000 (1996 dollars)

Figure 2.4 California Real GSP as a % of U. S. Real GDP
Billions of 1996 Dollars (1998 levels: U. S. $8,516.3, California $1,067.5)

° As has been the recent trend, the services sector continues to provide the largest share of California's Ð and the nation's Ð new jobs, and we expect this trend to continue in 2000 and beyond. Of the 454,400 non-farm jobs that California added in 1998, 194,200 Ð or 43% of the total Ð were created in the services sector, more than two-and-one-half times the number added in the trade sector, which ranked second in job creation. (Fig. 2.5)

° Although the services sector ranked first in recent years in both the number of new jobs and also in their percentage increase, this was not the case in 1998. The construction sector and the finance, insurance, and real estate sector ranked one and two in the rate of job increase with gains of 9.4% and 5.2%, respectively, followed by the services sector with 4.8%. However,
these two sectors had smaller shares of total non-farm jobs in 1998 Ð 4% and 6%, respectively Ð compared to 31% for the services sector.

° Service's dominant role in job creation in California continued in October 1999, adding more than half Ð 16,100 jobs Ð of the 26,000 new non-farm jobs for the month. Most of the gains occurred in business services and amusement
and recreation services.

As has been the recent trend, the services sector continues to provide the largest share of California's Ð and the nation's Ð new jobs, and we expect this trend to continue in 2000 and beyond.

C. Services - The Dominant Employment Sector
Figure 2.5 California Employment Changes by Industry
Services Sector Continues to Dominate
year-over-year differences between 1998 and 1999 (thousands)

° As the U. S. and California economies undergo restructuring from a traditional industrial economy to a post-industrial "New Economy", job growth that once occurred in other sectors has increasingly shifted to the services sector. Within that sector, job growth has occurred within the business services 6 sub-sector. In 1998, business-services jobs were the main factor underlying services job creation, adding 91,900 out of 194,200 services jobs (or 47%). (Fig. 2.6) This was close to the share of new services jobs that were added by business services during the 1993-98 period. We expect business services' dominant role to continue in 2000 and beyond.

As the U. S. and California economies undergo restruc-turing from a traditional industrial economy to a post-industrial
"New Economy", job growth that once occurred in other sectors has increasingly shifted to the services sector.

6 Business Services "includes establishments primarily engaged in rendering services, not elsewhere classified, to
business establishments on a contract or fee basis, such as advertising, credit reporting, collection of claims, mailing,
reproduction, stenographic, news syndicates, computer programming, photocopying, duplicating, data processing, services
to buildings, and help services." One of the fastest and growing sub-groups of Business Services in recent years has been
Computer Programming and Data Processing.

D. Business Services Ð Dominant in Services Job Growth
Figure 2.6 Employment Changes within California Services Sector
Top 10 Subsectors Business Services Continues to Dominate
year-over-year differences between 1999 and 1998

° Strong growth in services jobs has increased this sector's share of total non-farm jobs, rising to 31% of total non-farm employment in 1998 from 26% in 1989. Similarly, business services has seen its share of total services jobs rise during the same period Ð to 27% of total services employment from 21%.

° A recent report by the Bay Area Economic Forum states: "Although [Business Services] contains some low-wage jobs, more than 60% of it can be classified as high-wage and knowledge-based. This is an increase from 50% in 1996.
Significant growth in services such as computer programming, enterprise software solutions, and information technology-related consulting drive this trend." For example, many new jobs in information/ computer technology related to the Internet boom are part of the business services category. (See the New Economy section of this report for further details.)

° During the early phase of California's current economic expansion, the construction industry was viewed with some disappointment for not participating sufficiently in the recovery. Having been burned badly by overbuilding in the late 1980s and a collapse in demand during the 1990-93 recession, builders were leery of raising their level of activity.

° Whatever qualms the industry had in the early '90s have long since dissipated. A good indicator of activity, particularly home building, is the level of hiring. Construction workers are well-paid workers. The industry has now been the leader in job growth (%) for several years.

Construction was again the job growth leader in 1999, but not the dominant job creator in California. That honor goes to the
services sector.

Figure 2.7 Continued Growth in California Residential Construction
California Ð Housing Permits (thousands)
U. S. Ð Housing Starts (millions)

E. Construction
1. Residential Construction Ð Still Below Pre-1990's Level
Affordable Housing a Growing Concern

° In 1996, the industry had respectable job growth of 4.2%, but lagged the services sector at 4.4% and business services, the usual leader in job growth, at 10.0%. By 1997, construction had jumped into the lead with job growth of 8.7%, followed by business services at 7.0% and services at 3.5%. In 1998, construction repeated as the leader at 9.4%, followed by business services at 8.8% and services at 4.8%.

° Overall, construction provides a relatively small sector of total jobs (4.4% in 1998). In 1998, the industry added 51,500 jobs compared to 91,900 for business services and 194,200 for the entire services sector. Construction was again the job growth leader in 1999, but not the dominant job creator in California. That honor goes to the services sector.

Munroe Consulting Inc.

° The ongoing run-up in home prices has provided a strong incentive to build houses. After a record-setting 1999, California home sales are expected to slow next year as a result of rising interest rates and continued stock market volatility.
According to the California Association of Realtors (CAR), prices will rise 5%. The median price of an existing California home will jump from $215,520 this year to $228,400 next year. Statewide, median prices in 1999 rose 8% as of November, according to CAR.

° "The California housing market is having its best year on record, while the economic expansion has not only continued but has actually accelerated," said CAR's president, Diana Bull. "Home prices in many regions of the state are exceeding the peak levels of the previous housing cycle set in the late 1980s or early 1990s." Rising home prices can also be too much a good thing! San Francisco region home prices have risen at a record 12% annually for the past few years. Affordable housing has become a competitiveness issue for the region as median home prices doubled the national average at $305,000.

° Housing permits in California have risen steadily since 1995, and CAR predicts the new housing permits will reach 170,500 in year 2000, up 10% from a projected 155,000 in 1999. (Fig. 2.7) The current pace of homebuilding is expected to drive up the state's share of total U. S. housing starts from 6% in 1995 to 10% in 2000. (Fig. 2.8) However, that is still lower than the 14% share in 1990. California housing starts have not recovered to 1990 levels. Between 1970-1990, annual starts averaged 200,000. A lack of adequate housing supply may affect the state's competitiveness in the coming years and is one factor that
will slow state's economy in 2000.

° "The ongoing weakness in residential construction poses a potential bottleneck to the California economic ECONOMIC OUTLOOK 2000several years out," said economist Tom Lieser of the UCLA Anderson group at their quarterly December 1999 conference. "I think we can keep the economy going strong for several more years, but at some point Ð I do not know how many years "several" is Ð I think housing could be a constraint. We could lose some business to lower-cost regions."

Rising home prices can also be too much a good thing! San Francisco region home prices have risen at a record 12% annually for the past few years. Affordable housing has become a competitiveness issue for the region as median home prices doubled the national average at $305,000.

Figure 2.8 California Housing Permits as a % of U. S. Housing Starts
1998 Units (millions): U. S. 1.623, CA .125

° Non-residential construction increased in 1999 but at a much slower rate than in recent years, rising 8.2% (based on dollar valuation) in 1999's first half after growing by more than 50% between 1996 and 1998.

° Silicon Valley, which had been the state's growth leader since 1995, expe-rienced slower growth in 1998 and early 1999. These declines parallel the recent decline in the pace of job growth (%) in the Valley.

° Southern California is now the state's center of non-residential construction gains as a result of the recovery from the major recession of the early 1990s. Orange County had an increase of 25.6% in the first half of 1999, following a 38.1% gain in 1998. Los Angeles County rose 6.1% after a 36.2% gain last year. San Diego rose 8.2% in 1999 following a 23.5% increase in 1998.

° The San Joaquin Valley and the Sacramento region posted double-digit gains in non-residential construction in 1998 and in the first half of 1999, reflecting growth in high-tech and back-office job growth.

2. Non-Residential Construction

° In 1993, the U. S. unemployment rate was already declining, while California's was still rising. (Fig. 2.9) At that time, the state's unemployment rate was about two and one-half percentage points above the nation's, and a gap of two or more percentage points persisted for several years.

° In 1996, California overtook the nation in percentage job growth, and by 1997 the gap between the state and U. S. unemployment rates had narrowed to about one percentage point. Even though California's rate of job growth was higher than the nation's, the state's higher rate of population growth perpetuated the unemployment gap.

Even though California's rate of job growth was higher than the nation's, the state's higher rate of population growth perpetuated the unemployment gap.

F. California's Unemployment Rate is Getting Closer to the National Rate Ð Testimony to a Strong State Economy.

Figure 2.9 Unemployment Rate (%)
California's Unemployment Rate Closing in on the U. S. Rate

Even though the state has a higher unemployment rate than the nation, several of California's regions have remarkably low unemployment rates. In third quarter 1999, the unemployment rates in the nine-county Bay Area and the San Diego region, were both significantly lower than the national rate.

° In October 1999, the nation's unemployment rate dipped to 4.1%, the best showing yet for this long economic expansion which began in March 1991. That rate which followed September's 4.2% rate, is the lowest since the 3.9% level of January 1970.

° California's unemployment rate fell to 4.8% in October, from 4.9% in September. The October gap between California and the nation was less than one percentage point Ð 0.7%.

° Even though the state has a higher unemployment rate than the nation, several of California's regions have remarkably low unemployment rates. In third quarter 1999, the unemployment rates in the nine-county Bay Area and the San Diego region, were 3.1% and 3.3% respectively, both significantly lower than the national rate. The Sacramento Region, a four-county sub-region of the Central Valley, had an unemployment rate of 4.1%, also lower than the national rate. The Central Valley as a whole had a 7.8% rate, due to a rate of 10.1% in the populous San Joaquin region. The Los Angeles region, which had almost half of the state's non-farm jobs (47%), had an unemployment rate of 5.4%

during the same period, higher than the national rate. Varying levels of unemployment in different California regions reflect their respective economic structures.

° It is noteworthy that unemployment rates were lower in the third quarter than in the comparable 1999 period in all four of the state's major economic regions and also in the three sub-regions of the Central Valley. This occurred even though job growth overall slowed somewhat from its pace in 1998. We expect unemployment rates to continue to fall in the state in 2000,
and to fall nationally from 4.2% in 1999 to 4.1% during 2000.

In 1999, consumer prices in California jumped a full percentage point. The major cause was California's rising home
prices. Higher gasoline prices were also a factor.

G. Inflation Remains Tame Despite California's Strong Expansion Ð The "New Economy" Helps

° Consumer prices have historically fallen during recessions and risen in recoveries. In the current expansions in California and the nation, the first half of this pattern occurred, but the second half has been very restrained. As the nation experienced a recession during 1990 and part of 1991, con-sumer prices fell. However, as recovery took hold in the nation in 1992
and 1993, consumer prices remained stable through 1996 when they began to decline again. (Fig. 2.10) The influence of the "New Economy" (widespread use of information technology) has helped to contain inflation via rising productivity.

Figure 2.10 Consumer Prices Ð % Change
Inflation Continues to be Tame in California and the U. S.

° In 1999 consumer prices in California jumped a full percentage point. The major cause was California's rising home prices. Higher gasoline prices were also a factor. The strong increases in housing prices are expected to moderate, contributing to a slight decline in the state's CPI in 2000.

° Although California's gasoline prices have been markedly higher than the nation's, energy costs have been rising in the nation in 1999 and have been driving up the consumer price index. This has been a result of OPEC's efforts to limit the amount of oil its members extract and export.

° From 1991 to 1994, California personal income growth was lower than that of the nation as the state lagged the nation in recovery from the recession. In 1995, however, a restructured California surpassed the nation in income growth and has retained the lead since that time. (Fig. 2.11) This is not surprising in light of world leadership in high technology. California's higher concentration of high-wage jobs in computer software and hardware, semiconductors, biotechnology, and entertainment will sustain this lead in the foreseeable future.

Almost all regions of the state will experience higher average incomes, but distribution of income by
regions will be uneven.

H. Strong Real Personal Income Sustains Record Gains In Consumer Spending

Figure 2.11 Real Personal Income Ð % Change (in 1996 dollars)

° In some years, California's income growth lead over the nation has been more than a full percentage point. In 1996 and 1998, the state's personal income growth was 1.1 and 1.4 percentage points higher than the nation's. In 1999, however, personal income growth is expected to decline more in California than in the nation, which will shrink California's lead over the nation to just 0.3 of a percentage point. The decline results from the loss of well-paying manufacturing
jobs due to reduced exports to Asia and continuing productivity increases.

° In light of the renewed demand for California's high-tech products in Asia, along with the diverse strength of the California economy, we expect personal income growth in California to rise by more than half of a percentage point in 2000. Almost all regions of the state will experience higher average incomes, but distribution of income by regions will be uneven. The income gap between the San Francisco Bay Area and the rest of the state will continue to widen in the next several years. This is primarily a result of the area's "super-heated" e-economy.

° In addition to rising personal income, consumer spending in California and the U. S. has been robust because of the "wealth effect" as an increasing percentage of the population has rising "net worth" due to the strong stock market.

° ECONOMIC OUTLOOK 2000

Éthe worst of the Asian crisis is over for California's high-tech manufacturing exports, and we expect growth in manufacturing
employment during the next 15 months and beyond.

° High-tech manufacturing was a weakness in the California economy in 1999, caused in large part by the ongoing slump in exports to Asia. The state lost about 10,000 jobs in durable manufacturing in the first three quarters of the year. However, the losses nearly halted in the third quarter, and the prognosis for this sector has improved with continuing recovery in Asian
economies.

° Recent evidence from the California Trade and Commerce Agency supports the view that the worst of the Asian crisis is over for California's high-tech manufacturing exports, and we expect growth in manufacturing employment during the next 15 months and beyond.

° California exports to 10 major Asian nations grew 19.1% during the third quarter of 1999 (from the comparable period a year before), following declines of 20.3% in 1998 and 2% in the first half of 1999. The biggest export gains involved South Korea, Taiwan, Hong Kong, and China. The state's exports to Asia are expected to continue to expand in 2000 as the region
continues to recover. California's exports overall increased 10.2% in the third quarter, with healthy gains in sales to some European countries including France, Italy, Ireland and Netherlands. Exports to Belgium, Sweden, U. K. and Germany declined.

° During the first three-quarters of 1999, California's exports overall rose 0.5% from a year earlier. However, exports to Asia rose 4.5% during this period, led by increased sales to Korea (up 51%), Taiwan (up 15%), and China (up 11%). Mexico surpassed Japan as California's largest export market through the third quarter of 1999.

I. California's High-Tech Exports Are Growing Again
Table 2.1 Top California Export Industries
INDUSTRY % Change % Change % Change % Change
1996-97 1997-98 Q3 1999 YTD CA Exports

Electronic, Electrical Equipment 3.4 -4.0 3.5 28.8
Industrial Machinery, Computers 3.5 -8.1 1.8 25.6
Transportation Equipment 19.1 2.0 -9.3 9.1
Instruments & Related Products 13.4 -0.7 1.3 8.8
Food & Kindred Products 1.0 -3.9 -16.5 4.2
Source: Massachusetts Institute of Social and Economic Research (MISER), Series 1 Data

In general, California agricultural exports have been affected less by Asian economic problems than those of other
states, particularly states specializing in bulk commodity exports such as wheat and soybeans.

° Overall, California's top four export sectors, as described in Table 2.1, totaled $20.4 billion and comprised more than 72% of California's exports.

° California's top two export sectors, Ð electronics and electrical equipment, and industrial machinery and computer equipment increased 3.5 and 1.8%, respectively, through the first nine months of 1999. Exports in these two categories totaled $42.3 billion or more than 54% of total California exports in the first nine months.

° Agricultural exports fall into several export categories, with the food and kindred products category being the largest. In 1998, 78% of the state's $6.7 billion in agricultural exports were in this category. (Agricultural exports were 6.4% of California's total exports of $104.97 billion in 1998. This percentage was identical in 1997.)

° In general, California agricultural exports have been affected less by Asian economic problems than those of other states, particularly states specializing in bulk commodity exports such as wheat and soybeans. This is because growers in California tend to export high-valued consumer-ready products, which are aimed at high-income consumers. Food purchases by high-income consumers were less affected by the crisis than food purchases by others.

° During the first three-quarters of 1999, however, California's exports of food and kindred products declined 16.5%, suggesting these higher-income consumers have decided to postpone discretionary purchases. The California Trade and Commerce Agency says exports of food and kindred products declined in Europe and Asia, often by substantial percentages.

California's Top Four Export Sectors

Table 2.2 California Export Summary
Millions of Dollars % Change from Year Ago
1998 1999 1999 1998 1999 1999
Annual 1st Half 3rd Qtr. Annual 1st Half 3rd Qtr.

Total Exports $104,968 %50, 193 $27,620 -4.2 -4.2 10.2

World Regions
Asia Ten 41,301 20,628 11,365 -20.3 -2.0 19.1
North America 26,017 12,973 7,378 10.7 -2.0 19.1
Western Europe 23,222 10,777 5,664 9.9 -6.7 1.3
South/ 3,862 1,589 915 15.9 -9.5 -7.7
Central America

Rest of World 10,567 4,226 2,298 8.4 -19.8 -3.8
Source: UCLA Anderson, December 1999

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California is a large and diverse state with distinctive regional economies. In this report we have divided the state into four economic regions.

1. **The nine-county San Francisco Bay Area:**
Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma

2. **The five-county Los Angeles Basin:**
Los Angeles, Orange, Riverside, San Bernardino, Ventura

3. **The 19-county Central Valley, with three sub-regions:**
° Sacramento Region: El Dorado, Placer, Sacramento, and Yolo
° North Valley: Butte, Colusa, Glenn, Shasta, Sutter, Tehama, and Yuba
° San Joaquin Region: Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare

4. **The one-county San Diego Region:** San Diego County

Our Definitions of the Regions Are In Agreement with Common Usage
The definition of the four major regions used in this report are those that the regions themselves use, with some minor discrepancies. The Association of Bay Area Governments (ABAG), the major intergovernmental body in the S. F. Bay Area, as well as the Bay Area Economic Forum define the San

Francisco Bay Area as consisting of the same nine counties we have listed above. This is also the definition used by the Center for the Continuing Study of the California Economy (CCSCE).

The Los Angeles Economic Development Corp. (LAEDC) as well as the Economic Report of the Governor define the Los Angeles region as consisting of the same five counties we have listed above. CCSCE adds Imperial County to these five. However, Imperial County has neither commuting, economic, nor geographic links to the Los Angeles region. In agreement with the LAEDC and the Governor's Report, we have chosen not to add Imperial County to the five-county Los Angeles region.

The San Diego region is generally accepted as consisting only of San Diego County.

Our definition of the Central Valley and its sub-regions reflects geography and economics and is in agreement with the definitions used by other economic organizations. CCSCE, for example, uses exactly the same three sub-regions. Our definition of the Sacramento Region corresponds to a

A. California's Four Major Economic Regions
III. Regional Economic Overview

San Diego and the San Francisco Bay Area were the number one and two job growth regions in the state reflecting their "New Economy" base. Not surprisingly these two regions also had the lowest level of unemployment in 1998. Sacramento metro area as consisting of the Sacramento MSA (El Dorado, Placer, and Sacramento counties) and the Yolo MSA (Yolo County). Our definitions of North Valley and the San Joaquin Region agree with the usual definitions of the Sacramento Valley and San Joaquin Valley, respectively.

B. Interregional Employment Growth Comparisons Ð an Overview

° This section examines annual job trends from 1993 to 1998 for major California Regions and also analyzes the most recent 1999 data for California Metro Areas.

° Employment growth in the state and its four major economic regions for total non-farm jobs and for the seven major job sectors is summarized in Table 3.1 for the five-year-period 1993-98. The unemployment rate for 1998 (average value) is also provided.

° Conclusions from the 1993-1998 data (Table 3.1):
a) San Diego and the San Francisco Bay Area were the number one and two job growth regions in the state reflecting their "New Economy" base. Not surprisingly these two regions also had the lowest level of unemployment in 1998.

b) In terms of total number of new jobs in the period, the ranking for regions was 1) Los Angeles, 2) Bay Area, 3) Central Valley, 4) San Diego.

c) In terms of increases in number of manufacturing jobs, San Diego was the leader (68,000), followed by Los Angeles (64,500), Bay Area (19,490), and the Central Valley (9,800).

d) San Diego was the leader in government job growth (%) closely followed by the Central Valley.

e) San Diego was also the leader in construction job increases (%) followed by the San Francisco Bay Area.

f) In terms of services job growth, the Bay Area and San Diego were tied for first place. The rankings reflect the strong "new economy" base for these two regions.

g) In overall terms, the Los Angeles Region created more than a third of the California jobs.

° Conclusions from the 1998Q3 to 1999Q3 data (Table 3.2):
a) Ranking of regions by job growth (%) Ð Los Angeles (2.7%), Central Valley (2.6%), Bay Area (1.8%), and San Diego (1.1%) Ð Considerable slowdown in the San Diego Region relative to the 1993-1998 period.
b) Ranking by unemployment level Ð Bay Area (3.1%), San Diego (3.3%), Los Angeles (5.4%), and Central Valley (7.8%) Ð Nothing surprising here in light of the high-tech economies of the Bay Area and San Diego.
c) The Los Angeles Region, given its population and size, created nearly 46% of the total jobs in California.
d) Except for the Central Valley and the Los Angeles Region, there was a decline in F. I. R. E. jobs reflecting continued restructuring and downsizing in these industries.

Table 3.1 California Regional Job Performance, 1993-98
Job Growth in Various Categories for the Four Major California Regions.
The unemployment rates are from 1998 (averages).

Job Category Bay Area Los Angeles San Diego Central Valley California
Non-farm
% Growth 14.4% 10.1% 16.2% 12.3% 12.8%
Change 411,600 584,500 153,100 202,860 1,538,800

Unemployment Rate
rate 3.5% 5.8% 3.5 % 10.1% 5.9%

Services
% Growth 25.4% 16.0% 25.4% 21.9% 21.9%
Change 217,600 275,300 73,100 85,120 757,100

Manufacturing
% Growth 15.4% 6.6% 8.3% 11.5% 8.6%
Change 68,200 64,500 9,800 19,490 155,200

Trade
% Growth 11.5% 9.6% 9.8% 8.6% 11.0%
Change 72,000 129,200 22,100 34,320 310,100

Government
% Growth (2.2%) 4.1% 8.8% 7.7% 4.0%
Change (10,000) 34,800 15,700 32,910 83,000

Construction
% Growth 40.6% 32.1% 54.7% 28.9% 35.0%
Change 44,100 60,700 21,600 18,400 155,800

FIRE*
% Growth 2.4% (4.8%) 3.2% 6.8% 0.5%
Change 5,000 (18,700) 2,000 6,300 3,800

T& PU*
% Growth 9.8% 15.0% 24.9% 0.8% 13.7%
Change 16,500 42,500 8,900 8,870 83,400

*FIRE= Finance, Insurance, & Real Estate, T& PU= Transportation & Public Utilities

Recent Job Performance of California Metro Areas:
The fastest growth for 1999 was the Southern California metro areas of Riverside/ San Bernardino (4.4%) and Ventura (4.0%). (Table 3.2)

In 1999 Growth in non-farm employment in California was also robust in the Central Valley metro areas with Merced, Kern, and Tulare showing the biggest percentage gains for the year.(Table 3.2) Faster growth in the periph-eral Southern California and the Central Valley metro areas reflect factors such as availability of land, affordable housing, and less traffic congestion and other quality of life issues.

All Northern Metro Areas exhibited slower job growth in 1999 relative to 1998 except for the Oakland Metro Area (from 2.9% in 1998 to 3.2% in 1999). The Oakland Metro Area (Contra Costa and Alameda) is now the fastest growing region as the high-tech industry continues to expand from

Santa Clara to East Bay including the Tri-Valley area that includes the cities of Pleasanton, Livermore, Dublin, and San Ramon.

The Oakland Metro Area (Contra Costa and Alameda) is now the fastest growing region as
the high-tech industry continues to expand from Santa Clara to East Bay including the Tri-Valley
area that includes the cities of Pleasanton, Livermore, Dublin, and San Ramon.

Table 3.2 Job Trends in California Metro Areas 1998 and 1999

	Non-farm Jobs	**Job Growth Annual Rates**	
	1998 (thousands)	**1998 Final**	**1999 (Jan-Oct)**
Southern California	7,469	3.2	2.6
Los Angeles	3,947	2.1	2.1
Orange	1,295	5.0	3.3
Riverside-S. B.	875	4.0	4.4
Ventura	251	3.6	4.0
San Diego	1,100	4.4	2.1
Central California	944	2.8	2.9
Fresno	278	1.4	3.3
Kern	184	2.7	2.8
Kings	28	5.2	2.3
Merced	52	4.7	3.8
Tulare	92	2.7	3.3
Modesto	138	4.5	2.4
Stockton	172	2.9	2.2
Northern California	4,015	3.2	2.3
San Francisco	1,013	3.0	2.0
Oakland	976	2.9	3.2
San Jose	957	3.3	0.4
Sacramento	648	3.7	3.3
Santa Cruz	92	1.9	1.4
Santa Rosa	173	4.7	3.8
Vallejo-Napa	156	3.7	3.6

Source: UCLA Anderson Forecast, December 1999

Job growth for 1999 in the San Jose Metro Area (0.4%), the core Silicon Valley County, has been the slowest among the Northern California Metro Areas as a result of the continued effects of the Asian crisis on Silicon Valley high-tech exports.

The peripheral Bay Region Metro Areas of Santa Rosa (3.8%) and Vallejo-Napa (3.6%) exhibited healthy job growth in 1999. (Figure 3.2) Continued strong job growth in these areas is, to a significant degree, due to fewer growth limiting factors such as lack of affordable housing, and available land in these outlying metro areas of the San Francisco Bay Region.

Sacramento MSA's linkage to Silicon Valley high-technology and its develop-ment as a high-tech region on its own has allowed the region to obtain healthy employment growth in 1998 (3.7%) and 1999 (3.3%). Of course, factors such as availability of affordable housing and land, and well thought out regional economic development strategies have helped the region to become a standout in the Central Valley of California.

C. California Regional Economies Ñ Details

1. Non-farm Employment Growth:

The Central Valley was affected less by the 1990-93 recession than most of California, mainly because region is less dependent on defense-related, high-tech manufacturing and much of the Valley's agricultural output is recession-resistant. This resistance shows up in non-farm jobs as well as farm jobs. Job growth in the Central Valley in 1994, for example, was 1.8% compared to 0.9% for the state and 0.5% and 0.2% for the Los Angeles Region and the Bay Area, respectively.

By 1995, the Bay Area was recovering strongly, with job growth of 2.4%, the same as the San Diego Region. These two regions outpaced the state as well as the other two major economic regions. By 1996, the Bay Area was out in front of the state and its three other major economic regions, and in 1997, job growth in the Bay Area rose to 4.2%, well ahead of the 3.0% for the state. However, the San Diego region outpaced all others with job growth of 4.8%. In 1997, job growth in the Los Angeles Region rose for the first time in two years.

In 1998, job growth in the Bay Area declined from a year earlier, and the rate also was lower than the state's 3.5% growth for the first time since 1994. A major cause was Asian economic problems, which reduced demand for Bay Area's high-tech products. Job growth also declined in the San Diego region, although this region continued to lead the state. Despite these declines, job growth increased in the state as a whole in 1998. This increase was driven not only by gains in the Central Valley and Los Angeles region, but also by higher job growth outside the state's four major economic regions.

From 1993 to 1998, the San Diego Region had the greatest cumulative job growth (16%), followed by the Bay Area (14%). (Fig. 3.1) This reflects San Diego's high-tech resurgence with excellent performance in digital media, telecommunications and biotechnology. The contribution of the University

of California at San Diego has been a key factor in the region's renaissance via research and development linkages to the economy.

What does recent data tell us about the direction of non-farm employment growth? Figure 3.2 compares year-over-year growth between 1998 and 1997 and between the averages of the third quarters of 1998 and 1999. The third quarter typically has strong job growth. Businesses hire college students for summer employment. Summer weather opens recreation-related jobs. Also, the third quarter is a busy time for agricultural regions, with harvesting and food processing in full swing.

In the state and all its major regions, contrary to expectations, year-over-year job growth in third quarter 1999 was less than a year earlier. The sharpest declines occurred in the San Diego Region, where job growth dropped to 1.1% from 4.4%, and in the Bay Area, to 1.8% from 3.2%. The Bay Area continues to see only modest job growth in manufacturing. The fourth quarter 1999 will most likely evidence a slight slowdown in the state economy.

Figure 3.1 Non-farm Job Growth in the State and Its Four Major Economic Regions
(% change in 5-year interval between 1993 and 1998)

Figure 3.3 Unemployment Rates Continue to Decline in the State and Its Four Major Economic Regions
(1993-1998 are annual averages)

2. Unemployment Rates Continue to Decline in the State and Its Four Major Economic Regions

Since the recovery in 1993, the state unemployment rate has continued to decline each year, from 9.4% in 1993 to 5.9% in 1998 (Fig. 3.3), although it was still higher than the national rate of 4.5% in 1998. However, the gap between the two rates has narrowed to 1.4% in 1998, closing the gap by half since 1993.

The unemployment rate in the Central Valley also edged down each year between 1993 and 1998, from 13.2% to 10.1%. However, as has historically been the case, the Valley's unemployment rate continued to be several points higher than the averages for the state and its other major economic regions. (Fig. 3.3) The main reason is its large shares of jobs in agriculture, construction, and other sectors with seasonal patterns. Since the annual unemployment rate is an average of monthly rates, low rates during the harvest and canning seasons can be offset by higher rates at other times.

As has historically been the case, the Valley's unemployment rate continued to be several points higher than the averages for the state and its other major

economic regions. The main reason is its large shares of jobs in agriculture, construction, and other sectors with seasonal patterns.

Figure 3.2 Non-farm Job Growth (% annual change)
in the State and Its Four Major Economic Regions
(1998 based on annual data; 1999* based on third quarter averages)

° What does recent data tell us about trends in unemployment rates in California and its major economic regions? Figure 3.4 compares average unemployment rates in the third quarters of 1998 and 1999. These rates have continued to decline in the state and its four major economic sub-regions, and the rate for the state has moved closer to the national rate reflecting continuous improvement in the California economy.

° In 1998, the rate of non-farm employment growth declined in the Bay Area and the San Diego Region. It also slowed in the state and its four major economic regions, particularly San Diego and the Bay Area in the 1999 third quarter from the comparable year-earlier period. Yet, the unem-ployment rate has continued to decline in all regions. One explanation is the civilian labor force is growing less rapidly than non-farm employment, thus driving the unemployment rate lower even as the rate of non-farm employment growth slows.

3. Services Employment Growth
° As the U. S. and California economies undergo restructuring from a tradi-tional industrial economy to a post-industrial "New Economy", job growth that used to occur in other sectors has increasingly shifted to the services sector. And within the services sector, job growth has increasingly occurred within the business services 7 sub-sector.

As the U. S. and California economies undergo restructuring from a tradi-tional industrial economy to a post-industrial "New Economy", job growth that used to occur in other sectors has increasingly shifted to the services sector.

Figure 3.4 Unemployment Rates Continue to Decline
in the State and Its Four Major Economic Regions
(1998* and 1999* are third quarter averages)

Business Services "includes establishments primarily engaged in rendering services, not elsewhere classified, to
business establishments on a contract or fee basis, such as advertising, credit reporting, collection of claims, mailing,

reproduction, stenographic, news syndicates, computer programming, photocopying, duplicating, data processing, services
to buildings, and help services." One of the fastest and growing sub-groups of Business Services in recent years has been
Computer Programming and Data Processing.

° Of the 1,538,800 non-farm jobs that California gained during the 1993-98 period, almost half (757,100 jobs or 49.2%) occurred in services. And of that total, one-half (379,300 jobs or 50.1%) occurred in business services. By 1995, business services had surpassed health services as the biggest single services sub-sector in terms of total jobs; in 1998, business services jobs constituted 27% of total services jobs, and health services, 21%.

° From 1993 to 1998, the Bay Area and San Diego region had identical services job growth, 25.4%. (Fig. 3.5) The state and the Central Valley also had identical services job growth, 21.9%. The Los Angeles region was the lowest, with 16.0%.

° Over the same five-year period, the Bay Area led the state and the other regions in the percentage of total non-farm employment growth that occurred in the services sector (53%), followed by the state (49%), the San Diego region (48%), the Los Angeles region (47%), and the Central Valley (42%). The Bay Area also led the state and other regions in the percentage of total services employment growth that occurred in the business services sector (56%), followed by the Los Angeles region (50.3%), the state (50.1%), the Central Valley (42.2%), and the San Diego region (41.6%).

° The Los Angeles region added the greatest number of services jobs among the four regions during the five-year period with 275,300, followed by the Bay Area with 217,600. However, total non-farm employment in the Los Angeles region was about twice that of the Bay Area in 1998 Ð 47% of the state total compared to the the Bay Area's 24%.

Of the 1,538,800 non-farm jobs that California gained during the 1993-98 period, almost half occurred in services. And of that total, one-half occurred in business services.

Figure 3.5 Services Job Growth in the State and Its Four Major Economic Regions
(% change in 5-year interval between 1993 and 1998)

° What does recent data tell us about the direction of services employment growth? Figure 3.6 compares 1998 and 1997 and the averages of the years' third quarters, which typically have strong job growth.

° After declining in 1998, services job growth in the Bay Area dropped sharply in the 1999 third quarter to 2.9% from the year-earlier 4.7%. It also dropped in the Central Valley from 4.4% to 3.2%, after having risen in all 1998. However, by far the biggest third-period decline came in the San Diego region, from 6.2% in 1998 to 1.8% in 1999. Recall that non-farm employment growth also declined sharply in the San Diego region in the same period, from 4.4% to 1.1%.

4. Manufacturing Employment Growth

° In 1994, in the aftermath of the 1990-93 recession, all regions except the Central Valley experienced manufacturing jobs losses. By 1995, the Bay Area was rebounding markedly, with job growth of 3.0%, not far behind the Central Valley with growth of 3.4%. In 1996, the Bay Area, benefiting from strong demand for its high-tech manufactured goods in Asian markets, saw its job growth rate soar to 5.9%. In 1997, job growth cooled somewhat in the Bay Area to 4.7%, almost the same as San Diego's 4.8%. Growing Asian economic problems had not yet greatly affected California's high-tech manufacturing industries.

° In 1998, Asian economic problems began to take a toll. The rate of manu-facturing job growth declined in all regions, with the impact being most pronounced in the Bay Area Ð to 2.6% from 4.7% a year earlier. The recession in Asia affected the Bay Area more than the rest of the state because Asia had been California's biggest export market, and the state's exports were dominated by high-tech capital goods, with a disproportionately large share coming from Silicon Valley.

Figure 3.6 Services Job Growth (% annual change) in the State and Its Four Major Economic Regions
(1998* based on annual data; 1999* based on third quarter averages)

° From 1993 to 1998, the Bay Area enjoyed sharply higher job growth than the other regions Ð 15.4%, followed by the Central Valley with 11.5%. (Fig. 3.7) Los Angeles trailed all regions with 6.6%.

° Manufacturing in the Bay Area tends to be concentrated in Silicon Valley. In 1998, manufacturing's share of total non-farm employment was 28% for the San Jose Metropolitan Statistical Area (MSA), compared to 13% for Oakland, and 8% for San Francisco. Manufacturing's share of total non-farm employment for the state and the Los Angles-Long Beach MSA were 14% and 17% respectively. Manufacturing's 14% share of the state's non-farm jobs ranked it number four among the state's non-farm jobs sectors.

Manufacturing in the Bay Area tends to be concentrated in Silicon Valley.

Figure 3.7 Manufacturing Job Growth in the State and Its Four Major Economic Regions
(% change in 5-year interval between 1993 and 1998)

Figure 3.8 Manufacturing Employment Growth (% annual change) in the State and Its 4 Major Economic Regions
(1998 based on annual data; 1999* based on third quarter averages

Figure 3.9 Wholesale and Retail Trade Job Growth in the State and Its Four Major Economic Regions
(% change in 5-year interval between 1993 and 1998)

° All regions except the Central Valley showed year-over-year job losses in third quarter 1999, with sharp declines in the Bay Area and San Diego regions. The Central Valley posted growth of 1.5% in the quarter only because of substantial job growth in the San Joaquin sub-region; the Valley's two other sub-regions sustained losses. Food processing is a major component of manufacturing in the San Joaquin sub-region, and this industry is relatively resistant to economic fluctuations.

° Recent data suggests California's high tech manufacturing economy has not yet bounced back from the Asian problem, even though job creation has strengthened in other sectors of California's economy. This assessment agrees with that from the Federal Reserve Bank of San Francisco in its September 1999 edition of Western Economic Developments. "High-tech manufacturing remains the primary weak spot for the [Twelfth] District economy [which includes California], with substantial ongoing job losses in computer-related and aerospace manufacturing." (p. 1) "É expansion in both sectors was held down [during 1998] by weak international demand conditions. These condi-tions have become less severe this year, but have not been reversed."

5. Retail and Wholesale Trade Job Growth

° In 1994 when California was beginning its recession recovery, the Bay Area, Los Angeles and San Diego regions had trade job growth of less than 1%. In 1995, job growth more than doubled in the Bay Area, Los Angles region and the state. In 1996, Bay Area job growth rose further to 2.5%, which was markedly faster than in the state as a whole. However, job growth rose even more in the San Diego region to 2.8%. In 1997, the San Diego and Bay Area regions again ranked one and two.

° Despite the Bay Area's 1998 decline in the job growth rate, it led the state and the other three major economic regions in cumulative job growth during the 1993-1998 period. (Fig. 3.9) The state's sizeable lead over the other three major regions reflects not only strong trade job growth in the Bay Area, but also substantial trade job growth outside of the four major economic regions.

Recent data suggests California's high tech manufacturing economy has not yet bounced back from the Asian problem, even though job creation has strengthened in other sectors of California's economy.

6. Government (Federal, State, and Local) Employment Growth
Statewide Breakdown of Government Jobs:
Before looking at the regional breakdown, it is instructive to review trends in federal, state and local government employment in California. Figure 3.11 shows that between 1993 and 1998, federal government employment declined every year; state government employment was roughly unchanged; and local government employment rose.

Every year from 1994 to 1998 reflected a loss in federal employment in California of at least 3%. Average annual percentage losses over the five-year period were 4.3%, or an average annual loss of 13,380 jobs. Although these losses were part of an ongoing federal cutback, California was especially hard hit by military base closures.

During the same time, state government employment grew by 5,360 jobs annually, a 1.4% annual increase, and local government employment added 24,620 jobs annually, a 1.8% annual increase. Much of the substantial gains in local government employment in 1997 and 1998 stemmed from increases in K-12 education-related jobs, driven largely by the state mandate for smaller class size.

As a result of these changes, the shares of government jobs in the state changed somewhat between 1993 and 1998. Federal jobs declined from 16.2% of the total to 12.4%. State government's share edged up from 18.6% to 19.1%, and local government's share rose from 65.3% to 68.5%.

Between 1993 and 1998, federal government employment declined every year; state government employment was roughly unchanged; and local government employment rose.

Figure 3.10 Federal, State, and Local Government Employment Levels in California (in thousands)

Figure 3.11 Percentage Annual Changes in Federal, State and Local Government Employment in California

Regional Breakdown of Government Jobs:
The Bay Area was the only major California region to suffer net losses in government job growth between 1993 and 1998. The Bay Area also was the only major economic region to show net government job losses in the period, a decline resulting from military downsizing in the aftermath of the Cold War.

The Bay Area was the only major economic region to show net government job losses in the period, a decline resulting from military downsizing in the aftermath of the Cold War.

Figure 3.12 Government Job Growth in the State and Its Four Economic Regions
(% change in 5-year interval between 1993 and 1998)

The San Diego region and the Central Valley, in contrast, had average annual percentage gains of 1.8% and 1.5%, respectively, or average annual gains of 3,140 and 6,582 jobs, respectively. (Fig. 3.13) The state and the Los Angeles region performed identically on a percentage basis.

The San Diego region lost only 900 jobs (about 1% of the total state losses). Although this region had been expected to show net gains of federal employ-ment due to the consolidation there of military activities formerly scattered elsewhere, these gains did not materialize.

During the 1993-98 period, all four major economic regions enjoyed substantial gains in local government employment, with much of this occurring in elementary school education. The state gained 123,100 local government jobs, almost five times the increase in state government jobs (26,800 jobs). The Los Angeles region led in local government job gains with 46,300 jobs, followed by the Central Valley with 31,060 jobs, the Bay Area with 16,000 jobs, and the San Diego region with 14,300. Within the Central Valley, 16,700 jobs (or 54% of the total Central Valley gain) were created in the in the San Joaquin region, 10,500 in the Sacramento region, and 3,860 jobs in North Valley.

The state and three of its major economic regions experienced strong increases in government job growth in 1998 and 1999. (Fig. 3.13)

During the 1993-98 period, all four major economic regions enjoyed substantial gains in local government employment, with much of this occurring in elementary school education. The state gained 123,100 local government jobs, almost five times the increase in state government jobs (26,800 jobs).

Figure 3.13 Government Job Growth (% annual change) in the State and Its Four major Economic Regions, 1998 and 1999
(1998 based on annual data; 1999* based on third quarter averages)

Summary Changing Patterns of Government Jobs in California
What does recent data show about the distribution of job gains among various governmental levels?

The state and its four major economic regions all lost federal jobs. The state lost 5,767 federal jobs; the Central Valley, 2,033 jobs; the Los Angeles region, 1,033 jobs; the San Diego region, 500 jobs; and the Bay Area, 333 jobs. As noted earlier, the San Diego region was expected to gain federal jobs as a result of base consolidations but this did not happen.

National Economy Factors
California's unemployment rate fell to 4.8 percent in October, down from 4.9 percent in September. October was the second month that California's unemployment rate has been below 5 percent and is the lowest rate in California since December 1969, when the rate was 4.4 percent, based on data estimated by a different method. The unemployment rate a year ago, in October 1998, was 5.9 percent.

Figure 3.14 Regional Employment Growth
Four Major Economic Regions and State

° At the state level Ð the Bay Area lost 3,400 state positions while the three other major economic regions and the state gained.

° In the 1993-1998 period, California's gain of 26,800 state government jobs was about one-fifth as large as its gain in local government jobs of 123,100, and all major economic regions shared in the gain.

° Gains in state government jobs comprised a larger percentage of total job gains than during the period 1993-98. California's gain of 18,200 state gov-ernment jobs between the third quarter averages of 1998 and 1999 was more than a third as large as its gain of 49,133 local government jobs.

However, in 2000, all four regions are likely to be affected by national economic factors that should in general slow down job growth a bit in 2000 from what it was in 1999.

D. California Regional Forecasts

The Expansion Continues, but at a Slower Pace

The four major economic regions of California have distinct characteristics and performed differently in 1998 and 1999. However, in 2000, all four regions are likely to be affected by national economic factors that should in general slow down job growth a bit in 2000 from what it was in 1999. These two factors are 1.) slowdown in the National Economy and 2.) growth limiting factors such as adequate supply of workers, affordable housing and traffic

While strong job growth is a good development for workers, the Fed is concerned that it could spark inflation. Their reasoning: Employers desperate for scarce workers woo them with higher wages and benefits, costs likely to drive up consumer prices if not constrained by other forces.

The ongoing expansion in the state continued in 1999, but at a slower pace than in 1998. Slower growth was most pronounced in the Bay Area and the San Diego region. Manufacturing in the state has still not fully recovered from declining exports and accompanying job losses that are mainly attributable to Asian economic problems. During the first nine months of 1999, the state lost about 10,000 jobs in the durable manufacturing sector, with a disproportionately large share of these jobs being Bay Area high-tech manufacturing jobs.

On a brighter note, the Federal Reserve Bank of San Francisco reported in the November 1999 issue of Western Economic Developments that job losses in durable manufacturing in California nearly halted in the third quarter, and the prognosis for this sector has improved with recovery in East Asian economies. Also, high-tech services continued to show strong job growth. These trends bode well for a recovery in California's high-tech manufacturing in 2000, particularly in the computer-related manufacturing sector.

The slowdown in job growth in 1999 was mild in the Los Angeles region and the Central Valley. There is concern in the Los Angeles, however, about further contraction in the manufacturing sector, particularly aerospace, not only because it provides well-paying jobs, but because other supply industries, such as metals manufacturing, are tied to it. There is also concern about ongoing re-location of some apparel manufacturing operations to Mexico. In contrast, the Los Angeles region motion picture industry, which has been experiencing a mix of problems and lost jobs in 1998, stabilized in 1999 and resumed growth. This job growth should continue in 2000.

The slowdown in job growth in 1999 was mild in the Los Angeles region and the Central Valley. There is concern in the Los Angeles, however, about further contraction in the manufacturing sector, particularly aerospace, not only because it provides well-paying jobs, but because other supply industries, such as metals manufacturing, are tied to it.

Table 3.3 Regional Employment Growth Forecast
Four California Regions and the State. Non-farm Employment Ð 1998 to 2000
1998 1999e 2000f

California 3.5% 2.8% 2.3%
Bay Area 3.2% 2.3% 2.1%
Central Valley 3.0% 2.8% 2.4%
Los Angeles Region 3.0% 2.8% 2.3%
San Diego Region 4.4% 2.2% 2.0%
Note: e Ð estimate; f Ð forecast Source: EDD

References:
Section III.

Regional Economic Overview

The San Diego region economy appeared to be taking a pause in 1999 after being the percentage leader in total non-farm job growth among California and its four major economic regions not only in 1998, but also during the five-year period 1993-1998. In the latter period, the San Diego region was also the leader in four out of seven major job sectors. However, during the year between the third quarters of 1998 and 1999, the region exactly reversed its performance between 1993 and 1998: it was last on a percentage basis in total non-farm job growth among California and its four major economic regions and last in four out of seven major job sectors. The construction sector stands out as being one where San Diego went from being decisively in first place to decisively in last place.

Since San Diego's decline in job growth occurred across a number of sectors, including services, manufacturing, government, and construction, it is difficult to isolate specific causes for these declines. It is conceivable that the region is just taking a pause after very rapid job growth to assimilate all the new jobs it has created. At any rate, during the 1990s, the San Diego economy underwent a dramatic restructuring, with its mix of industries and jobs shifting fundamen-tally from a primary dependence upon federal defense spending to a much more diversified, commercial mix of private firms which are mainly in high-technology and information-based industries. International trade also became much more vital for local businesses and was a major stimulus for the regional economy's resurgence in the 1990s. With this fundamental overhaul is place, the San Diego economy is well positioned to return to being a leader in regional job growth during the next five years.

Employment forecast for the four California Regions and the state are sum-marized in Figure 3.14 and Table 3.3. The Central Valley of California will be the job growth leader (2.4%) in 2000 with the Los Angeles Region as a close second (2.3%). We expect non-farm job growth for California in 2000 to be at 2.3% compared to 2.8% for 1999.

° ECONOMIC OUTLOOK 2000

At any rate, during the 1990s, the San Diego economy underwent a dramatic restructuring, with its mix of industries and jobs shifting funda-mentally from a primary dependence upon federal defense spending to a much more diversified, commercial mix of private firms which are mainly in high-technology and information based industries.

California Employment Development Department, Employment Data

www. calmis. ca. gov

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Western Economic Developments. November 1999. (Federal Reserve Bank of San Francisco

The contribution of small business to the California economy that receives the most mention is job creation. Indeed, statements like the following from a March 1995 workforce development newsletter, which cited figures from the Small Business Administration (SBA), are heard regularly: "Small Business

Creates Ninety Five Percent of New Jobs." (Workforce Development Strategies, Vol. 6, No. 10 (March 1995), p. 8.)

The public discourse about the role of employer size has focused primarily on the relationship of small businesses to job creation. However, in addition to job creation there is increasing emphasis on the role of small firms in fostering innovation and enhancing productivity.

The SBA no longer considers job creation to be the principal contribution of small business. In a June 1998 nationally distributed white paper, the SBA says that "É small firms make two indispensable contributions to the economy:

1. By creating opportunities for women, minorities, and immigrants, they are an essential mechanism by which millions enter the economic and social mainstream."(pp. 1-2)

2. As sources of constant experimentation and innovation, they are an integral part of the renewal process that defines market economies. They have a crucial role as leaders of technological change and productivity growth. In short, they change market structure."

These are essentially the same two contributions that small businesses make to the California economy as stated in the Small Business State Profile for California 1998. "Not only do small businesses play a critical role by efficiently reallocating the state's resources and injecting new ideas into the economy with business starts and stops, but their diversity and composition provide the work force with many opportunities."

1. Small Business as an Entry Mechanism for Women, Ethnic Minorities, and Others

Small businesses have been a critical entry mechanism for women and ethnic minorities. They also hold great potential for low-income Californians and for over-40 entrepreneurs; the former potential has been under-utilized.

The economic prosperity that many Californians have enjoyed during the state's ongoing expansion has not been shared by all socio-economic levels of society. The Public Institute of California released a research report in early

Small businesses have been a critical entry mechanism for women and ethnic minorities. They also hold great potential for low-income Californians and for over-40 entrepreneurs; the former potential has been under-utilized.

A. What are the Major Contributions of Small Business to the Economy

IV. The Role of Small Business in The California Economy

Figure 4.1 Wealthier Start-ups Get Most SBA Loans
% of SBA-backed Loans for Business Start-ups During 1993-1997
By Income-Status of Receiving Area1999 showing that the annual income in the bottom 10% of the income dis-tribution
for a household of four in 1997 was $13,000; that's $2,000 less than in 1989, before the recession. Many in this category were working poor who had come off of welfare, but ended up in low-paying jobs. The conclusion is
that work alone is not enough. Families moving to unstable and inadequately paid jobs need more support if they are to succeed.

Evidence is growing that small businesses particularly microenterprises offer a viable success route for low-income people, who tend to be concen-trated
in low-income areas. A study by the Aspen Institute shows average
annual household incomes among poor entrepreneurs engaged in microenterprises increased from $13,000 to $24,000.

Critics say the SBA's heavy lending in middle and high-income areas suggests the agency is taking fewer
risks on the companies most in need. The lower default rate may be the result of funneling a higher proportion of its loans to
less-risky businesses.

Fledgling microenterprises run by low-income entrepreneurs rarely have access to bank credit. The SBA is ideally positioned to fill this need by providing low-interest loans. However, a recent study by the Newhouse Newspapers showed most SBA loans from 1993 to 1997 went to recipients who could easily get loans elsewhere. (Fig. 4.1) The study found thousands of dentists, doctors and lawyers, along with scores of fast-food franchises, were among the top recipients of government-backed SBA loans for business start-ups.

Critics say the SBA's heavy lending in middle and high-income areas suggests the agency is taking fewer risks on the companies most in need. Responding to Congress' regular complaints that SBA loan-default losses were too high,
the agency cut its annual default losses by some $50 million in just a few years. The lower default rate may be the result of funneling a higher proportion of its loans to less-risky businesses.

Why loans to dentists, doctors, and lawyers are less risky than those to start-ups in low-income areas seems plainly evident. However, the situation with franchises is less obvious. In fact, franchise outlets, with their national brands
and uniform operations, are far less risky than most other new businesses. Fewer than 5% of franchise businesses fail each year versus 65% of all start-ups in their first five years,

government figures show. The Newhouse analysis found that over five years, the SBA had backed hundreds of loans for fast-food franchises, led by Subway sandwich shops with 616 loans. Next were Schlozsky's deli outlets, with 262 loans; Blimpies sub shops, 254; Dairy Queen restaurants, 215; Domino's Pizza stores, 197; and Burger King franchises, 98. Support for microenterprises low-income areas might also be coming from a bipartisan piece of legislation introduced in Congress in 1999. Known as the PRIME (Program for Investment in Microentrepreneurs) Bill, it offers self-employment as an escape route from poverty.

The bill proposes to give thousands of residents the needed skills to run their own businesses and thus secure their futures. The bill's cost is $105 million over four years to train would-be entrepreneurs. If enacted, the bill would effectively make the federal government a major supporter of incubators. A growing number of people over 40, traumatized by corporate downsizing, are starting their own companies to get more control over their working lives.

Figure 4.2 A Strong Economy Is Inspiring New Entrepreneurs. Percentage of Out-Of-Work Executives Who Decided to Start Their Own Businesses

A growing number of people over 40, traumatized by corporate downsizing, are starting their own companies to get more control over their working lives. (Fig 4.2) In its quarterly survey of 3,000 job seekers (4th Quarter 1998), 85% of those who opted to start their own company were over 40, reports Challenger, Gray and Christmas, an outplacement firm in Chicago. One year earlier, 73% of those starting a business were over 40.

Some employees have been caught twice by downsizing since the early 1990s, observes John A. Challenger, CEO of the outplacement firm. They see the business climate has changed Ð that Corporations no longer offer a safe employment haven Ð so taking matters into their own hands, they start a business. That trend is particularly viable for the over-40 crowd because they have the financial resources and confidence it takes. Many have experience as independent contractors and realize they can run their own business. Many also have a spouse with a steady, full-time job.

Challenger Gray and Christmas also report that the current strength in the economy, along with high levels of consumer confidence and a healthy supply of venture capital, are prompting more out-of-work executives Ð including those over 40 Ð to start their own businesses. In the same Fourth Quarter 1998 survey of 3,000 job seekers, the company found that 11% of those who had lost their jobs decided to go into business for themselves. That's up from 8% in the 1998 third quarter and 5% in the second quarter when the growing world economic crisis made business people uneasy. (Fig 4.3)

For many, getting downsized turns out to be a blessing. They find they can operate their own businesses effectively and enjoy the greater flexibility and sometimes Ð the greater income that comes with self-employment. Some out-of-work people have chosen to start their own business mainly because they thought it would be easier than finding another job. Also, the idea of working out of their home was appealing. Not everyone, however, is good at marketing themselves or keeping the books.

For many, getting down-sized turns out to be a blessing. They find they can operate their own businesses effectively and enjoy the greater flexibility and sometimes the greater income that comes with self-employment.

Figure 4.3 Money Is Not the Only Reason for Starting Your Own Business
Percentage Increased in Income

Whenever the economy strengthens and the job market improves, some factors prompting people to choose self-employment Ð such as loss of a job or fear of it Ð lose some of their force, and some would-be entrepreneurs choose to remain someone else's employee or return to being one. Research supports this theory. In a study released in early 1999, the Washington, D. C-based National Federation of Independent Business (NFIB) found business starts fell 4% in 1997 and 14% in 1996. In all, 2.9 million businesses were launched in the United States in 1997, compared with 3.5 million in 1995. (Fig. 4.4)

However, the economy's impressive strength through 1998 and 1999 has exerted an opposite effect on some would-be entrepreneurs. Even though the strong economy apparently played a role in the drop in business starts from 1995 to 1997, it undoubtedly also has been a factor in the higher survival rate of new businesses. The NFIB study reports that only 1.3 million small businesses folded in 1997, down from 1.6 million in 1996.

2. Small Businesses as Change Agents Ð A Critical Role in the New Economy

Today's rapidly changing economy favors small firms because of their capa-bility to quickly adapt to change. Such nimbleness is especially critical now because "the U. S. economy has restructured, moving from an industrial economy to an information one, and has made the transition to the 21st century." (SBA, 1998)

In the new information economy, continued innovation is the rule. More than half of the sales of high technology firms come from products less than 18 months old. What emerges from the new evolutionary theories of new and

small firms is that markets are in motion, with many new small firms entering an industry and many exiting. About 10-16% of firms enter each year and about 9-14% leave.

In the new information economy, continued innovation is the rule. More than half of the sales of high technology firms come from products less than 18 months old. What emerges from the new evolutionary theories of new and small firms is that markets are in ..

Figure 4.4 As the Economy Strengthens,
Start-up Businesses Decline
(millions of new business starts.)**The Key Conclusions of the SBA Report (pp. 12-16) are:**

° The demographic dominance of small businesses mostly reflects the contin-uous entry of new enterprises rather than their staying power over the long haul.

° A constant supply of new firms replacing existing ones provide a source of new ideas and experimentation vital to the New Economy.

° Small firms play a critical role in technological innovations startups produce innovations in less crowded fields, while larger firms succeed in more established fields.

° Small firms provide the lion's share of entrepreneurship in the economy. Highly structured organizations are inefficient in dealing with change.

In a recent book, Lester Thurow of MIT, focuses on the role of entrepreneurs and their start-up companies in the economy. Many of his points agree with those of the SBA white paper. In particular, he shares similar views about the role of entrepreneurs and their start-up companies as change agents in the New Economy.

"Capitalism is a process of creative destruction," Thurow writes, "The new destroys the old. Both the creation and destruction are essential to driving the economy forward. Television throws the movie industry into a big economic decline until it is revived by the invention of the VCR. Entrepreneurs are central to the process of creative destruction, since they are the individuals who bring the new technologies and the new concepts into active commercial use. They are the change agents of capitalism." (p. 83)

He also believes start-up companies develop technological innovations that big companies tend to overlook. "Many new companies get started when researchers in big companies turn up ideas that don't fit in with their employ-ers' business plans. When their ideas are turned down by their employers, these researchers go off and set up new companies to exploit them." (p. 110)

However, Thurow parts company with the SBA on the issue of the growth trajectory of small firms. He believes that what is valuable to the economy is start-up firms that seize new opportunities and rapidly grow.

"Successful economies need small firms that rapidly grow into big firms. Big firms provide good jobs; big firms do research and development; big firms export; big firms are a training ground for future entrepreneurs. But some of those big firms have to be new firms, since old big firms are going to contract. In America from 1990 to 1995, twenty-one out of the twenty-five industrial firms that had more than a hundred thousand employees shed jobs. Net, they lost three jobs for every one they produced. But it was not small companies that were creating America's new good jobs. It was another set of companies that were in the process of becoming big." (p. 252)

Not only does Thurow place a high value on start-ups that grow into big com-panies, but he also places a low value on start-ups that remain small. "Big companies provide most of the economy's good, well-paying jobs with career

"Successful economies need small firms that rapidly grow into big firms. Big firms provide good jobs; big firms do research and development; big firms export; big firms are a training ground for future entrepreneurs.

Figure 4.5 California Companies Dominate the Technology "Fast 500" with 131 Firms in 1997 and 1998 Northern California Dominates

ladders. Remaining an employee in a small company that is going to remain small means that the prospects for high wages are bleak." "Small is not beautiful. What is beautiful is a small firm that rapidly grows into a big firm." (p. 234)

With some 13% of the nation's population, California was home to 26% of the "Fast 500 Companies" in 1997 and 1998. Northern California dominates the list of "Fast 500 Companies." However, Southern California is catching up.

A. Small Businesses That Become Gazelles Ð Fast and Sleek Companies Ð California Dominates

The metaphor "gazelle" symbolizes fleet and sleek companies that grow by leaps and bounds. A gazelle is defined as a firm that doubles its annual sales base of at least $100,000 and grows at an annual rate of 20% over four years. Gazelles provide a disproportionate share of the most desirable new jobs; an often-cited statistic is that gazelles do 80% of new hiring even though they make up 3% of the U. S. companies.

California technology firms dominated the 1997 and 1998 "Deloitte & Touche Technology Fast 500" list. With some 13% of the nation's population, California was home to 26% of the "Fast 500 Companies" in 1997 and 1998. Northern California dominates the list of "Fast 500 Companies." However, Southern California is catching up. Southern California picked up five more of California's 131 Fast 500 companies in 1998, with its count rising to 55. (Fig. 4.5) Northern California dropped five companies in 1998, with its count falling to 76. Now in its fourth year, the "Fast 500" program ranks the 500 fastest-growing technology companies in the United States based on percentage revenue growth for five years.

A number of the California companies that made the 1998 Fast 500 companies were small businesses that became gazelles. By definition, a gazelle must start with revenues of at least $100,000; this is double the Fast 500 1993 requirement that revenues must be at least $50,000. Earlier definitions of a small firm have been based on number of employees. The government partially or fully exempts small firms from some regulations and now also accepts the definition of a small firm in terms of revenues. For example, firms under $500,000 in annual revenue are not covered by minimum wage laws. In this section we will define a small firm as one with base year revenues under $500,000.

Table 4.1 shows a subset of the top 100 companies of the 1998 "Fast 500". These were seven small California technology companies that became gazelles. California had other gazelles in the top 100 that were not small companies because base year revenues exceeded $500,000. For example, the number one company on the 1998 "Fast 500" was Advanced Fibre Communications, Inc., a communications company in Petaluma, CA that posted a five-year growth of 43,103%. However, its base year revenue was $620,000.

Table 4.1 Seven Small California Technology Companies That Became Gazelles
California Technology Companies with 1993 Revenues >= $100,000 and <= $500,000 Which Ranked in the Top 100 of
Deloitte & Touche Technology 1998 "Fast 500" Winners. In 1993, these companies were considered small companies
(revenues <= $500,000) while still meeting a "gazelle" requirement (base year revenue >= $100,000)

Number Company Name Description Revenues on list % growth (thousands) (thousands)

3. OmniCell Software 32,492 $ 147 $ 47,910 Palo Alto
Technologies (for healthcare)

5. Incyte Pharmaceuticals Biotechnology 31,567 $ 279 $ 88,351 Palo Alto
16. NetVantage Semiconductors/ 14,043 $ 112 $ 15,840 El Segundo
Components/
Electronics

21. PointCast Internet 12,224 $ 146 $ 17,993 Sunnyvale
38. Cardiovascular Medical/ 8,894 $ 126 $ 11,332 Irvine
Dynamics Scientific/
Technical

47. Telecom Solutions Communications 6,932 $ 200 $ 14,049 Lake Forest
51. SPYRUS Internet 6,684 $ 292 $ 19,809 San Jose

Entrepreneurship is a key ingredient that moves the American economy forward. Fortunately, interest in entrepreneurship is strong and growing in California, notably in the universities. An example is the UC Berkeley Haas School of Business. In the 1980s, only 1% or 2% of graduating UC MBAs wanted to start out as entrepreneurs. Today, thanks in part to a booming stock market for high-tech start-ups, as well as the enormous success of high-tech industries in California, 10% to 20% want to start their own companies, school officials report. (Fig. 4.6) Many of these nascent entrepreneurs are not waiting until they graduate. From Berkeley to Stanford to

the Massachusetts Institute of Technology, dozens of MBA students are already running businesses Ð and some are obtaining venture capital.

Fostering Entrepreneurship: Incubators

In the 1980s, only 1% or 2% of graduating UC MBAs wanted to start out as entrepreneurs. Today, thanks in part to a booming stock market for high-tech start-ups, as well as the enormous success of high-tech industries in California, 10% to 20% want to start their own companies, school officials report. 63

Figure 4.6 Entrepreneurship Is Alive and Well Among MBAs at UC Berkeley

Percent of Graduating MBAs Wanting to Start out as Entrepreneurs

1. University-Related Incubators

Although intelligent, motivated and energetic, some potential MBA entre-preneurs lack the skills needed to successfully launch and run a start-up.

To foster entrepreneurship, the Haas School opened its Berkeley Business Incubator in the summer of 1997. The incubator provides selected students and recent alumni with free space and other support to develop their ideas into start-up companies. The program's creator, Haas Professor John Freeman, says it is perhaps the only business incubator in the country associated exclusively with an MBA program.

The 1,500-square-foot facility that houses the incubator offers computers with a high-speed Internet access and a conference room. Companies' "offices" are separated by moveable dividers. In addition, the incubator also puts the resident entrepreneurs in contact with professors, lawyers and other mentors who volunteer their time.

2. Incubators in General

About a quarter of the roughly 600 business incubators nationwide are affil-iated with a university, the National Business Incubator Association (NBIA) reports. The other approximately 450 incubators serve the general public. Like university-affiliated incubators, these entities aim to foster the develop-ment and growth of small companies. In general, they package office or industrial space with support services, and most importantly, business training. They also help establish networks that connect growing businesses to venture capital and allied companies, both instrumental in fostering survival and growth.

3. "Mixed-use" Incubators and "Cluster" Specific Incubators
While early incubators tended to be "mixed-use" incubators, those based on industry clusters have now become the trend. (An industry cluster is a concentration of complementary industries that generate wealth by exporting from the region.) Newer incubators usually share several common charac-teristics: each focuses on a specific, promising industry cluster; uses donated vacant office space, a combination of public and private funding, and is designed to become self-sufficient after the first couple of years rather than depend on continued contributions from sponsors.

4. Incubator-Supported Start-ups Have a High Success Rate
Training gained by budding entrepreneurs in incubators plus the business contacts they make undoubtedly raise the probability that their start-ups will survive. Starting a new business is risky, with the failure rate pegged at somewhere between 60% and 80%. Statistics show that the success rate of incubator-spawned startups is about 80%, a success rate probably partly attributable to the pre-selection of start-ups that qualify to enroll. At least ten criteria are used to screen prospective incubator tenants, including a viable business plan and some indication of financial viability. However, the training and contacts gained through the incubator process are definitely big factors in the high success rate.

5. Primary Sponsors of Incubators
The NBIA reports that 51% of all North American facilities are non-profit, public or private; 27% are academic-related; 16% are hybrids Ð that is, joint efforts among government, non-profit agencies, and/ or private developers; 8% are private, for-profit; and 5% fall into the "other" category, sponsored by a variety of non-conventional sources such as art organizations, Native American groups, church groups, chambers of commerce and port districts.

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Figure 4.7 California Cities With at Least Two Incubators
Silicon Valley Leads

6. California Incubators Ð Other Than University Related:
In addition to university-affiliated incubators, there are 45 other incubators

in operation in California, with 16 more in various stages of development. The results displayed in Figure 4.7 are quite remarkable. It is commonly thought that incubators tend to be used by cities lacking in successful business starts, particularly in the technology area. Yet San Jose Ð in the heart of Silicon Valley, arguably one of the most technologically advanced region in the world and one that does not appear to have problems spawning successful technology start-ups Ð has almost three times as many incubators Ð 10 Ð as the next closest city Ð Los Angeles with four. (And San Jose's total does not include a new incubator that recently opened in Cupertino Ð the Panasonic Digital Concepts Center.) Apparently Silicon Valley is not taking its techno-logical lead for granted and is doing its utmost to foster even greater entrepre-neurship in its area. Undoubtedly success will breed more success.

Although Los Angeles has only four incubators the city apparently is intent on doing something about that. Of the 16 incubators under development in the state, six are in Los Angeles with one each in neighboring El Monte, North Hollywood and Pomona.

7. Private Support for Incubators in California

(PG& E) has probably been the single biggest private supporter of non-profit incubators in California. It has teamed with community groups and local, regional and state government officials throughout its service area to promote economic development by supporting small business incubation. Since 1992, PG& E has helped develop more than 20 incubators, resulting in the creation or expansion of 500 businesses and more than 2,000 new jobs.

Pacific Gas and Electric Company (PG& E) has probably been the single biggest private supporter of non-profit incubators in California. It has teamed with community groups and local, regional and state government officials throughout its service area to promote economic development by supporting small business incubation.

In addition to supporting incubators in large urban coastal cities such as San Francisco and Oakland, PG& E has also directed its efforts to the Central Valley. Many parts of the Central Valley, particularly some counties in the San Joaquin where double-digit unemployment continues, have not shared the prosperity enjoyed by many Californians during the state's strong economic recovery. In Fresno County PG& E has contributed $50,000 to the Central Valley Business Incubator, which will allow it to accommodate more new businesses Ð increasing its size from nine businesses to 14 or 16.

The trend in most sectors of the economy has been smaller companies growing via merger or acquisition. Companies that once seemed huge now believe they have to merge to survive in the global economy

E. The Future of Small Business Ð "What is Beautiful is a Small Firm that Rapidly Grows Into a Big Firm."

A June 1998 SBA white paper argues that today's rapidly changing economy needs small firms because of their capability to quickly adapt to change. While true, this view has to be modified in view of what has been happening in the economy. The trend in most sectors of the economy has been smaller companies growing via merger or acquisition. Companies that once seemed huge now believe they have to merge to survive in the global economy: e. g., Bank of America and Wells Fargo being acquired by NationsBank and Norwest respectively; Pacific Bell being acquired by SBC; AirTouch, the number one U. S. cellular telephone company, acquired by Vodafone Group of the UK. In 1998, a record $1.61 trillion in U. S. mergers and acquisitions reshaped industries nationwide, a 78% increase over 1997 and the first trillion-dollar year for mergers and acquisitions. Moreover, U. S. companies have acquired or merged with each other in record numbers in each of the past four years and are on pace to set another record in 1999.

To quote Thurow, "Merger activity ($ 2.4 billion in 1998) is five times as great as it was in 1990 and 50% greater than it was in the previous record-high year (1997), with cross-border and European mergers growing at an even faster pace. Nine of the ten largest deals ever made were made in 1998. The other one was made in 1997. Mercedes buys Chrysler; Deutche Bank buys Bankers Trust. Are these new companies German companies, American companies, or global companies? The answer, of course, is global. The emerging global companies are larger than any national companies ever seen."

Strategic reasons for merging or buying include access to new technology and products, thus providing the acquiring firm a foothold in new markets. Almost half the fastest-growing U. S. companies are planning to grow through acquisition in the next three years, compared with 28% in the past three years, according to a new Pricewaterhouse Coopers survey of chief executives. (Fig 4.8)

High-tech firms are among the firms employing this strategy. A Bloomberg Business News story states: "Cisco Systems, Inc., Lucent Technologies, Inc., and Nortel Networks Corp. have been snapping up start-up networking companies at a breath-taking pace, spending billions to buy new technologies to speed Internet traffic." This article appeared before Cisco paid $6.9 billion to buy Cerent Corp. Ð a two-year-old telecommunications equipment firm in Petulama with only 287 employees that has yet to post a profit.

Thurow's conclusions on the topic of importance of small firms are most relevant:

° Successful economies need small firms that rapidly grow into big firms. They provide good jobs, do research, export, and train people.
° Many of tomorrow's big firms must be newly established firms, since many old firms will contract and stagnate.
° "What is beautiful is a small firm that rapidly grows into a big firm."

Strategic reasons for merging or buying include access to new technology and products, thus providing the acquiring firm a foothold in new markets.

Figure 4.8 Gaining Technology By Acquisition an Increasingly Popular Strategy (% of Fastest-Growing U. S. Companies Planning to Grow by Acquisition during the Three-Year Period Indicated)

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The U. S. Census Bureau released its estimates of California's population for 1998 by announcing that whites no longer formed the majority in the state. The California Department of Finance predicted in late December 1998 that whites would fall below the 50% mark at the beginning of 2001. (Fig. 5.1) The timing of the event is much less significant than the trend. California for a long time has been one of the most ethnically diverse places to live in the nation. The state's economic future will depend to a significant degree on the participation of the talents and abilities of all Californians regardless of ethnicity.

California for a long time has been one of the most ethnically diverse places to live in the nation. The state's economic future will depend to a significant degree on the participation of the talents and abilities of all Californians regardless of ethnicity.

A. Continued Growth in Diversity
V. Ethnic Groups and the State's Economy

Figure 5.1 Population Projections for California
by Ethnicity, 1990-2040 (millions)

B. Business Makeup in California by Ethnicity
As a whole, minority-owned businesses represent a significant portion of the California economy. There are already over 7,000 minority-owned firms in California with sales over $1 million. During the next twenty-five years the importance of minority-owned firms will grow further. Across the U. S., 90% of the population growth is expected in minority communities. Immense opportu-nities for business and growth will follow this population trend.

The most recent California data indicates that 541,414 businesses in 1992 were minority-owned, with total sales reaching $62 billion. Latinos owned 46% of those firms, blacks owned 12%, and Asians, Pacific Islanders, and American Indians owned 42%. While exact figures on the current number of minority-owned business in California are not yet available, the overall number of minority-owned firms has grown statewide 8 . (Fig. 5.2)

8 The census Bureau provides information on minority owned firms every five years. However, the data for each year is released two years after the close of the year for which the information pertains. Information for 1997 therefore is scheduled for release near the end of 2000

Figure 5.2 Total Number of Minority-Owned Firms in California
Their Total Sales 1992

The growth in minority firms has been a major source of new business formation. Minorities are more likely to employ minorities, which helps train managers and professionals who move into other firms. Even more important is that minority-owned firms provide a number of entry level positions that help workers take their first steps into the labor market.

Recent immigrants may also have social and business ties in their native countries. These connections can make exporting easier. In a study released in 1998, University of California at Berkeley researchers estimated that for every 1% increase in the number of first generation immigrants to California, exports from California increased 0.5%. They found this trend to be even more pronounced for immigrants from Pacific Rim countries.

The Bay Area has seen professional groups form such as the Silicon Valley Indian Professional Association and the Asian American Manufacturers Association that, among other priorities, focus heavily on fostering ties to their homeland. This has resulted in significant growth of Asian-owned (or started) high-tech firms in the Bay Area.

Many of the immigrants particularly from China, Taiwan and India have used their social and professional ties to their homeland to build successful businesses. Capital funding for many minorities is a major barrier. Chinese and Indian immigrants often use funding sources outside the traditional venture capital avenues found in Silicon Valley. Asian foundations and capital investment groups have provided the needed capital to get many of these firms started.

The two-way flow characteristic in these alliances brought opportunities for the Asian immigrant-owned firms to utilize resources and suppliers on both sides of the Pacific Ocean. Funding partners have also been instrumental in

There are already over 7,000 minority-owned firms in California with sales over $1 million. During the next twenty-five years the importance of minority-owned firms will grow further helping to open foreign markets to the newly founded companies. The
cultural understanding the immigrant business owners and their financial backers have for their native lands contributes to overcoming governmental barriers and hang-ups. Payoffs in the system have included the chance to use skilled programmers in India (where highly skilled programmers are much less expensive) and have manufacturing plants in Taiwan. By 1998, Chinese and Indians were running 25% of the high-technology firms in Silicon Valley.

The ties between Asia and Silicon Valley are for many Asian countries part of a move away from "brain drain," wherein the best and the brightest leave their homeland to study and work. Low-cost communications and advances in transportation are allowing many to come to the U. S. to study but return to their native countries to continue with their careers. It also allows those who do not wish to return to act as middlemen between their U. S. employers and their native countries. Subsidiaries and vital suppliers are often linked to U. S. companies through their immigrant employees that have chosen to leave their homeland.

B. Latinos are the Largest Ethnic Group Ð With Less than Proportional Income; Education is the Key

The median wage for the California Latino population is only $14,560, which is substantially below the state median of $21,000 and the white median of $27,000. (Fig. 5.4) Thus while Latinos make up 28% of the workforce in California, they only earn 19% of the wages. (Figs. 5.4 and 5.5) Considering that Latinos are projected to be the largest group of workers in California by 2025, the discrepancy is cause for serious concern for the long-term economic vitality of the state.

Figure 5.3 Labor Force Composition by Ethnicity, California 1998

Lower wages are largely the result of lower education levels. Only 14% of the Latino population in California possesses more than a high school diploma or more. Statewide, 45% of the population possesses more than a high school diploma or more (44% of whites, 52% of Asians, and 34% of blacks).

A recent study by the California Research Bureau estimates that if Latinos reached the same educational levels as the state average, an additional $28 billion of income annually would be realized for the economy, thereby generating an additional $1.7 billion annually in income taxes.

Thus while Latinos make up 28% of the workforce in California, they only earn 19% of the wages. Considering that Latinos are projected to be the largest group of workers in California by 2025, the discrepancy is cause for serious concern for the long-term economic vitality of the state.

Figure 5.4 Aggregate Wage Income by Ethnicity, California 1998

C. Capital Access a Problem for Minority Groups

Minority businesses across the U. S. receive only one to two percent of the total equity capital invested each year. California follows the same pattern. Recent research has pointed out that minority-owned businesses are signifi-cantly more likely to be denied bank credit, and when successful, tend to receive smaller loans compared to non-minority owned businesses.

Capital access problems exist for a myriad of reasons. Lack of information and the ensuing misperceptions top the list. Minority businesses are often viewed as "mom and pop" establishments and not considered as potential growth firms. Lenders may not recognize that fast growing minority-owned firms exist in nearly every industry. Finally, minority firms, in many cases are viewed as "higher risk" as a result of long standing racial bias.

Likewise, few venture capital firms specialize in minority lending, which along with government lending structures creates an over emphasis on commercial lending, which targets collateralized lending. It is well documented that minorities on average do not have the net wealth of whites. Success of minority-owned firms require access to capital. To aid entrepreneurial growth, especially in manufacturing and other capital-intensive industries, lenders must strive to make the capital more available. Coincidentally, greater profit opportunities exist in lending to minority businesses than financial institutions realize.

D. Regional Success Stories

One of California's real strengths relative to other states is that it is beginning provide a healthy business environment for a diverse population. Silicon Valley has been a region long criticized for its lack of inclusiveness. However, a recent report by the Public Policy Institute of California demonstrates that some minority populations are finding abundant success in Silicon Valley.

Chinese and Indian immigrants in particular have responded to perceived lim-its in their professional advancement by starting their own businesses and utiliz-ing social and business connections to their home countries. The Public Policy Institute found that in 1998 Chinese and Indians were running a quarter of the high-technology firms in Silicon Valley. Collectively these businesses represent $16.8 billion in sales and 58,282 jobs, impressive numbers by any standards.

Statewide there has been a huge increase in the number of Latino-owned busi-nesses. Between 1970 and 1990 the Latino population grew from 2.1 million to 7.6 million, a 253% increase. Between 1972 and 1992, the number of Latino-owned businesses grew from 28,166 to 249,717, a 787% increase! Business growth for Latinos has been more than three times their growth in population.

The five-county Los Angeles region has continued to see a dramatic increase in the number of Latino-owned businesses throughout the 1990s. By 1998, in Los Angeles, Orange, Ventura, San Bernardino, and Riverside counties there were an estimated 307,000 Latino-owned businesses, representing a 100% increase since 1992. Latino-owned firms in that area had combined sales in 1998 of $25.1 billion.

Having a role model has become important for many minority executives. The minority managers that reach the upper pinnacles of management were found to have twice as many mentor relationships early in their careers. While striving for advancement these executives also developed essential skills and established strong performance records.

Current high demand for qualified management is likely to enhance the trend of minorities gaining upper-level management positions. A study by Korn/ Ferry International found that many of today's senior minority executives were able to develop in progressive companies during the 1970s. Today these executives are serving as strong mentors for their peers. The Korn/ Ferry study also found that the demand for executive talent is outstripping the supply of qualified man-agers. The implication is that management skill will increasingly win senior executive positions regardless of old barriers in times past.

The Public Policy Institute found that in 1998 Chinese and Indians were running a quarter of the
high-technology firms in Silicon Valley. Collectively these businesses represent $16.8 billion in sales and 58,282 jobs, impressive numbers by any standards.

Figure 5.5 U. S. Households Using the Internet and Household Income
by Income and Ethnicity, 1998

E. Digital Divide

The "Digital Divide" describes the latest separation between the technology "haves" and "have-nots." It is clear that gaps in access to computers and Internet technologies exist along the lines of ethnicity, geography, income, education, family makeup and age. (Figs. 5.5, 5.6, and 5.7) As information technologies (IT) usage becomes more vitally linked to high-paying jobs, it is apparent that education must include an understanding of computers and the Internet. Anything else will contribute to widening the wealth distribution gap.

It is clear that gaps in access to computers and Internet technologies exist along the lines of ethnicity, geography, income, education, family makeup and age.

Figure 5.6 Internet Use in the U. S. by Household Type, 1998

The fight against the digital divide is being helped by the trend toward low cost computers and less expensive Internet access. Some areas are beginning to experience free Internet access provided by firms such as NetZero, Alta Vista, and Freei. net, but users have to be willing to view a continuous adver-tising banner for the free service. America Online, CompuServe and other Internet service providers are providing rebates that enable consumers to receive a computer and a monitor almost free when they sign up for three years of Internet service. Sun Microsystems is offering StarOffice software for free on the Internet. Computers and the Internet will become an affordable option for everyone that can afford a phone line as the number of companies offering free Internet access, free hardware, and free software increases. (94% of U. S. households had a phone line in 1998).

Lower-end computers and slower-speed Internet hook-ups today are analogous to radio and network television. Advertisers will pay for the service, but the product is not as good as what someone who pays extra can receive. Fuzzy television reception and music interrupted by multiple advertisements is not as good as cable television and music played on CDs, much the way slow dialup Internet access requiring a large advertising window be opened at all times is not as good as an always-ready, high-speed DSL or cable connection.

Waiting for the computer industry to offer free or low-cost options would take time and will still not solve the deeper problems of the digital divide. For this reason, some of the strategies aimed at reducing the digital divide have included creating community access centers and providing more computers and Internet connections to schools. These programs have had varying levels of success. Key is the amount of training provided to the administrators and teachers so that computer technology can be integrated smoothly into current curriculum. This is the real challenge!

The fight against the digital divide is being helped by the trend toward low cost computers
and less expensive Internet access. Some areas are beginning to experience free Internet access.

Figure 5.7 Internet Use by Education, 1998 76

A recent study by Harold Wenglinsky sponsored by the Milken Family Foundation and the Educational Testing Service (the group that administers the SAT) concluded that many students using computers in classrooms are scoring worse in math on standardized tests. Often students are using the in-classroom computers to do repetitious drills that were previously done on paper, a practice that tends to disengage the student from the work. Wenglinsky concluded that where computers are used to provide simulations corresponding to the concepts being taught the students are more successful in learning the material.

Training for parents and teachers must accompany large investments in computer technology to make a real impact in narrowing the digital divide. Wenglinsky's study points out that computers in classrooms alone will not make the next generation of workers more productive and IT capable. Just as business is integrating computer technologies into their processes, computer technologies also need to be integrated into education. Computers will not replace teachers but they can enhance the classroom experience when teachers fully utilize them.

Training and education also make community access points like libraries much more valuable to a community. Patrons want more than just computers to use; more individuals come to use libraries where computer training is provided.

Closing the digital divide in its entirety has been and will continue to be a moving target as technology and expectations ratchet up. Connectivity was once measured by the telephone penetration rate into households. The push was for every home to have access to a phone regardless of geographic loca-tion and income. Today we think of connectivity as including a computer and Internet access through dialup connections. Shortly we will consider today's dialup connections as inferior. Connectivity will then require high-speed, high-bandwidth connections. Many small business owners are already finding that without a high-speed Internet connection they are losing business to competitors that do.

The digital divide will persist as long as there are disparities in education as well as values. Ignoring the divide will likely make it worse since disparate Internet access can exacerbate income inequality and limit advancement. Closing the divide needs to be pursued through philanthropic as well as marketplace solutions.

Training for parents and teachers must accompany large investments in computer technology to make a real impact in narrowing the digital divide. Wenglinsky's study points out that computers in classrooms alone will not make the next generation of workers more productive and IT capable.

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Section V. The Role of California's Diverse Ethnic Groups in the State's Economy

Figure 6.1 Share of Women in their Primary Working Years in the Labor Force, Up 39% between 1950 and 1998
(women of ages 25-64 with jobs or looking for a job)

One of the most significant developments in the U. S. and California economies during the last several decades has been the greatly increased presence of women in the workforce. In 1950, just 33% of American women in their primary working years, ages 25 to 64, were in the labor force. (The labor force is defined as the fraction of working-age Americans with jobs or looking for jobs.) By 1993, this percentage had more than doubled, rising to 70.2%. And it has continued to edge up, hitting 72.4% in 1998, a record (Fig. 6.1)

Women have accounted for roughly 7 million of the 12 million workers to enter the labor force during the 1990s, a flood that has surprised many analysts. These 12 million new workers have raised the fraction of Americans at work to its highest level in history.

A. The Remarkable Increase of Women in the Labor Force Social and Economic Change

VI. Contributions of Women to the California Economy

Women have accounted for roughly 7 million of the 12 million workers to enter the labor force during the 1990s, a flood that has surprised many analysts. These 12 million new workers have raised the fraction of Americans at work to its highest level in history, 67.1%. The 1990s have been similar to other periods in U. S. history when the country has demonstrated a remarkable ability to augment its work force to meet the need. During World War II and again during the social changes and economic upheavals of the 1970s, for example, it drew vast numbers of women onto the job rolls. What has been different in the late 1990s is that the expansion occurred just as many econ-omists had concluded that the nation was finally reaching the upper limits of job growth. The thinking was that the women who were going to enter the work force had already done so. However, 7 million new women workers have proved them wrong.

Figure 6.3 American Women Spent 22% More Hours at Paid Jobs in 1997 than in 1976 (based on a 40-hour work week)

Women's increasing participation in the labor force has occurred across the board Ð single women and married women, with and without children. From 1969 to 1996, the proportion of wives working full-time, year-round rose from 17% to 39% in married-couple households with children. (Fig. 6.2) In married-couple households without children, the percentage of working

wives increased from 42% to 60% when a householder was under 40 years old and from 31% to 46% when a householder was 40 to 64 years old.

Not only are more women in the workforce, but they are also working more hours. American women spent 22% more hours at paid jobs in 1997 than in 1976, the U. S. Labor Department reports. Instead of the equivalent of 32 weeks of work women were working 39 weeks a year on average.

Figure 6.2 Percent of Married Women Working Full-Time
Up Sharply from 1969 to 1996

Not only are more women in the workforce, but they are also working more hours. American women spent 22% more hours at paid jobs in 1997 than in 1976, the U. S. Labor Department reports. Instead of the equivalent of 32 weeks of work, women were working 39 weeks a year on average. (Fig. 6.3) The growing number of hours worked by women has added to economic output. It has also created work for hundreds of thousands of people, including immigrants and entrepreneurs, who provide maid service, child care, grocery shopping and even cooking. These activities also add to the economy: when activities such as these that were once performed in the household are done in the market, there is an increase in national income.

While some women have sought work outside the home for variety or for challenge, the dominant reason why married women have joined the labor force is to increase household income, and in this respect they have made a vital economic and social contribution. According to an extensive Census Bureau analysis of real income changes from 1969 to 1996, married-couple households with children saw their median household incomes rise by more than 25% since 1969, thanks largely to working moms. (Fig. 6.4) If women's income were not counted, the 25.3% increase would have been only 1.5%. In married-couple households without children with a householder under 65 years old, median household income increased by 34%, but only by about 16% when the earnings of wives were excluded.

According to an extensive Census Bureau analysis of real income changes from 1969 to 1996, married-couple households with children saw their median household incomes rise by more than 25% since 1969, thanks largely to working moms.

B. Women's Vital Contribution to Household Income
Figure 6.4 Rise in Household Income Is Mainly from Working Mothers
% Increase in Median Household Income of Married Couples 1969-1996

Figure 6.5 Female and Male Headed Household Income, 1969 to 1999 (% change)

As would be expected, single-parent households with children did not do as well as two-parent households from 1969 to 1996. The median income of households with a female householder with children and no spouse rose by just 10% between 1969 and 1996; however, contrary to conventional wisdom the median income of households with a male householder with children and no spouse fared much worse, falling by 8%. (Fig. 6.5)

The number of men enrolled in college has declined each year from 1991 to 1995, while the number of women
has risen steadily. And by 2007, the department projects, the gender gap will be larger, with 9.2
million women and only 6.9 million men.

Figure 6.6 Rising Population of Women in Colleges
C. Women's Impressive Gains in Higher Education
1. Women are Now the Majority at the Nation's Colleges and Universities

Founded in 1701, Yale University started admitting women only very recently the fall of 1969. Today nearly half of Yale University's undergraduates are women. At Harvard, men hold a small edge over women students 53% to 47%.

For decades men have dominated the higher education scene, but nearly a decade ago a major trend started to emerge that has escaped public notice. The proportion of women to men on our college campuses started to climb.

The number of men enrolled in college has declined each year from 1991 to 1995, while the number of women has risen steadily. And by 2007, the depart-ment projects, the gender gap will be larger, with 9.2 million women and only 6.9 million men. (Fig. 6.6) Women outnumber men in every category of higher education: public, private, religiously affiliated, four-year, two-year.

"Men are just not as interested in higher education as women," said Alan McIvor, vice president of enrollment services at Beloit College in Wisconsin, who more than two years ago began urging the Associated Colleges of the Midwest, a group of 14 liberal arts colleges, to study the issue. According to McIvor, "They have many nonacademic interests". However, given the widening income gap between high school graduates and those with advanced degrees, many education experts worry that men's failure to pursue higher education will seriously limit their life choices in the New Economy where knowledge is of paramount importance.

There is no clear consensus why men seem less committed to higher education. Education experts say it is probably a confluence of several factors, from women's greater success in high school to a strong economy that offers significant job opportunities for men without higher education. "You start with who does well in high school, and women are ahead there," said Patricia Albjerg Graham, president of the Spencer Foundation of Chicago, which specializes in education research. Men not only do not do as well in high school as women, but they are also more likely to drop out than women.

Between 1950 and 1990, women's total bachelor's degrees as a percent of total degrees conferred more than from 24% to 53% as the per-cent of women graduates passed that of men. And this percentage is projected to rise to 56% in 1999.

Women are not just enrolling in greater numbers than men; they are remain-ing to graduate. (Fig. 6.7) Between 1950 and 1990, women's total bachelor's degrees as a percent of total degrees conferred more than doubled Ð from 24% to 53% Ð as the percent of women graduates passed that of men. And this percentage is projected to rise to 56% in 1999.

Women have also overtaken men in earning master's degrees, said Mary Dee Wenniger, editor and publisher of the national publication, Women and Higher Education. "It would not surprise me if within three to four years, women would be the majority population among U. S. citizens getting doctoral degrees," said Allen Sanderson, a research scientist at the National Opinion Research Center at the University of Chicago. A report dated November 2, 1999, entitled "Doctorate Recipients from United States Universities" Ð of which Sanderson was a co-author Ð certainly supports his conjecture. The report, done by the Center for the National Science Foundation, says that U. S. universities are awarding record numbers of Ph. D. degrees, largely due to an impressive increase in the number of women seeking graduate education.

Figure 6.7 Women's Total Bachelor's Degrees as Percent of Total Degrees Conferred, Academic Years 1950-1999

Women earned 17,322 doctoral degrees in the 1996-97 academic year, 40.6% of those awarded. (Fig. 6.8) That is an increase of 20% from five years before and of 52% from a decade before Ð and a seven-fold increase since 1967. The number of men earning doctorates annually rose by only 1,500 from 1977 to 1997. Yet the number of doctorates earned by women rose by 9,500 in the same period.

Figure 6.8 Share of Total U. S. Doctoral Degrees Earned by Women in 1996-1997 An Impressive Increase Over the Past Three Decades

2. Women's educational attainment is relevant to the gender wage gap

Women have continued to move into fields formerly dominated by men (Fig. 6.9) The percentage of bachelor's and master's degrees in engineering conferred on women was 16 times greater in 1995 than in 1971.

Figure 6.9 Women's Fields of Study and Degrees Conferred, Academic Years 1971 and 1995

In computer and information science, women's share of bachelors degrees more than doubled, and their share of master's degrees almost tripled. In business management and administrative services, women's share of bachelor's degrees was more than five times greater in 1995 than in 1971, totaling almost half of total degrees conferred; at the master's level, women's share rose to 37% in 1995, more than nine times its value in 1971. (Fig. 6.10) Women's increase in their share of total professional degrees conferred has been even more impressive. Their shares of dentistry, medicine, and law degrees in 1995 were 36 times, more than four times, and more than six times, respectively, what they were in 1971.

In computer and information science, women's share of bachelors degrees more than doubled, and their share of master's degrees almost tripled. In business management and administrative services, women's share of bachelor's degrees was more five times greater in 1995 than in 1971, totaling almost half of total degrees conferred.

Figure 6.10 Women's Professional Degrees as Percent of Total Degrees Conferred, Academic Years 1971 and 1995

There is good evidence that women who have studied and gone to work in formerly male-dominated fields have helped narrow the gender wage gap. Architecture and environmental design have been male-dominated fields, but women's earnings overall in these areas are a full 95% of men's. Moreover, women between the ages of 35 and 44 with bachelor's degrees in these fields have moved ahead of men, with their earnings rising to 109% of men's. In engineering, another male-dominated field, women now can earn 99% of what men do. Women earned 97% of men's earnings in chemistry and 94% in computer and information sciences.

Women, who came along at the right time and who chose to be in certain fields, such as those discussed above, are not greatly impacted by the gender

wage gap. However, for women who came from a different period and had children and stayed at home, and later went into the job market, the gender earnings gap is real and significant. In 1997, women's median annual earnings in general was $24,973, less than three-quarters that of men.

The gender earnings gap is attributable partially to differing qualifications rather than to gender discrimination. However, a March 1999 study released by the National Bureau of Economic Research concluded that a significant part of the gender wage gap cannot be explained by differences in occupation or education. The report concluded that there is a 6% to 16% gap after taking into account all possible non-gender related reasons. The bottom-line is that old biases die-hard. Many employers feel women do not need the money because they have men to support them. The important issue is that women should have the choice of participating in the economy up to their full potential without a "gender penalty."

D. Women's Rise to the Executive Suites
1. The "Sound of Shattering Glass" Ð A False Alarm!
It is Only a "Crack"!

Since entering the labor force en masse in the 1970s, women have been increasing their share of management and administrative positions. By 1998, women held between 35% and 45% of these positions, up from just 3% in 1977. (Fig. 6.12) Despite this progress, there is a "glass ceiling," a barrier that prevents women from rising to the highest levels of management. This past July there were a spate of articles reporting the "sound of glass shattering." Carleton "Carly" Fiorina had just been appointed as CEO and president of Hewlett-Packard Company, a company that helped create California's Silicon Valley and now has $47 billion in annual sales.

"The glass ceiling no longer exists," said Fiorina, then 44, just hours after it was announced that she was taking over the world's second largest computer company. "It's really about merit and results and talent." Despite the fact that she downplayed the realities of the gender gap, her selection did mark some impressive milestones. She is the first woman to head a company listed among the 30 Dow Jones industrials and the first to head a Fortune

The gender earnings gap is attributable partially to differing qualifications rather than to gender discrimination. However, a March 1999 study released by the National Bureau of Economic Research concluded that a significant part of the gender wage gap cannot be explained by differences in occupation or education.

Figure 6.11 The Gender Wage Gap has Been Closing at a Slow Rate Since 1960 (1997 median earnings: women $24,973, men $33,674)

500 company. As the new leader of the thirteenth-ranked company on the Fortune list, Fiorina joins just two other women on the Fortune 500 list Ð Jill Barad, CEO at Mattel, Inc., listed at number 331, and Marion Sandler heads Oakland-based Golden West Financial Corp., listed at number 171.

The examples cited here are few and far between and they really do not signify the shattering of the glass ceiling, but a crack at best!

Already, women claim the highest jobs at some start-ups, and many have steadily moved up at older
companies, driven by explosive growth in the computer and Internet industries and the need for
talented employees.

Figure 6.12 Women on the Move as Leaders in U. S. Business
(percent of women in management and administrative positions in the private sector in 1977 and 1998)

2. Women Making their Mark in Technology Companies
"Every appointment at this point is a milestone," said Jo Weiss, a vice president at Catalyst, a New York-based nonprofit organization that works to promote and track women in business. "We think this sends an important message to women that they can be business leaders." It also sends a message that women can lead a technology company. Already, women claim the highest jobs at some start-ups, and many have steadily moved up at older companies, driven by explosive growth in the computer and Internet industries and the need for talented employees. Other high-profile women at technology companies include Carol Bartz, chief executive of Autodesk, Inc., Ellen Hancock of Exodus Communications, Inc., and Meg Whitman of eBay, Inc.

"This notion that no women succeed in technology is wrong," said Donna Dubinsky, president and chief executive at Handspring, Inc. She formerly worked at 3Com Corp. and Apple Computer, Inc. "A lot of them may not be in the CEO position, but there are lots of very powerful women." Many of the women she refers to have risen in the ranks of large, established compa-nies. Examples include Ann Livermore, who heads HP's enterprise computer unit and who was on the short list to be CEO, is one of the two women leaders at HP's four business units; Linda Sanford leads International Business Machine Corp. 's global industries group; and Abby Kohnstamm is the highest ranking woman at IBM as senior vice president of corporate marketing.

Not all women make their mark in technology by climbing the corporate ladder at large established companies. Many women in technology choose to start their own companies, perhaps because "ladder climbing" is arduous as well as a thankless job. For example, Kim Polese left Sun Microsystems, Inc.

to start Marimba, Inc., and Katrina Garnett worked at Oracle Corp. before founding Crossworlds Software, Inc.

E. Women as Business Owners

1. Women-Business Owners in the United States

As noted earlier, many women have chosen to start their own companies rather than try climb the corporate ladder at large established companies. As of 1999, there are 9.1 million women-owned businesses in the U. S., which generate over $3.6 trillion in sales and employ 27.5 million workers. These firms constitute 38% of all U. S. firms.

The number of women-owned companies has been growing significantly faster than all firms in the U. S.; between 1986 and 1997, it grew two-thirds faster Ð 78% vs. 47%. (Fig. 6.13) Even more remarkable, the number of minority women-owned firms increased by 153% during this same period Ð three times faster than the overall business growth rate.

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Figure 6.13 Women-Owned Businesses; Minority Women-Owned, Growing Faster Than all Firms

What motivates women to start their own business? To answer this question, the National Foundation for Women Business Owners (NFWBO) and Catalyst surveyed a nationally-representative random sample of 800 women and men business owners. The question on motivations for women entrepre-neurs had eight possible responses, and the group was divided into three sub-groups: women who have owned their companies for 20 years or more, for 10 to 19 years, and for less than 10 years. Three of the most commonly cited responses (out of the eight possible) are plotted in Figure 6.

Interestingly, the percentage of women who cited a positive reason for starting their own business, i. e., to develop an entrepreneurial idea, declines among the more recent entrepreneurs. Conversely, the newest women business owners cited negative reasons Ð unchallenged (14%) and glass ceiling (22%) Ð more than the other two groups. Perhaps if these more recent owners were starting a business in 1999, a year marked by the "sound of glass shattering," fewer would have given negative reasons for starting their own business. The result is startling in light of recent relative success in the corporate world. One explanation could be that women in business are more aware than ever about "glass ceiling" limitations, and in addition, they feel chances of fulfillment in their own enterprises are greater.

Besides the three responses plotted in Figure 6.14, other responses that had a substantial percentage were: "Downsized" (Downsizing is the motivation for 10% of newer women business owners, compared to 6% of women in business 20 years or more) and "Fell into it" (This was a more common answer among 20+ years owners (14%) than among the newest owners (10%).

2. Women-Business Owners in California Ð The State is the Leader
As of 1999, there are over 1.2 million women-owned businesses in California, constituting 39% of all firms in the state. Women-owned firms employ more than 3.8 million people and generate nearly $549 billion in sales. California ranks first among the states in the number of women-owned firms as of 1999, first in employment, and first in sales. (Fig. 6.15) One factor that undoubtedly has contributed to these results is that California is the most populous state. Beyond that, however, California is still a younger state than those in the more established regions of the East and Midwest and still offers more opportunity to new businesses, particularly those founded by non-traditional owners, such as women.

Figure 6.14 Glass Ceiling and Desire for Challenge
Are Greater Motivations for Newer Women Entrepreneurs
(percents do not add to 100 because only 3 of 8 items are plotted)

The number of women-owned firms grew at the same rate as in the U. S. dur-ing 1992-1999. (Fig. 6.16) However, women-owned businesses in California grew faster in both employment and sales. (Fig. 6.15) Employment grew almost a third faster in California than in the nation, and sales grew about a quarter faster.

Why are women-owned firms in California getting bigger on average than their national counterparts in terms of employees and sales? One possible explanation was offered in the preceding section. California is still a more open state than many others with regards to opportunity for non-traditional entrepreneurs. At the same time, the state continues to grow faster than the nation as a whole in population and output. Thus, women-owned businesses in California tend to have better access to growing markets. And when sales grow, women-owned firms can hire more employees.

Another plausible explanation is the high-caliber of their founders. During this century Ð especially in the past several decades Ð California has benefited from strong in-migration (from other states and nations) of the best and brightest men and women. Many bright young women who graduate from the best universities in other regions decide they want to come to California, and some choose to start their own businesses when they arrive.

What attracts these talented newcomers to California? Certainly the weather and the state's geographical diversity play some role Ð as they have historically. The state's cultural diversity is also a strong attraction. But perhaps the main attraction is the state's reputation as a world-wide leader in technological innovation, e. g., as a leader in Internet-related developments.

California is still a more open state than many others with regards to opportunity for non-traditional entrepreneurs. At the same time, the state continues to grow faster than the nation as a whole in population and output. Thus, women-owned businesses in California tend to have better access to growing markets.

Figure 6.15 California Ranks First
Women-Owned Firms in California Growing More Rapidly than National Average, 1992-1999

3. Growth of Women-Owned Businesses in California Regions

Five of the seven MSA's examined here showed smaller increases in the number of women-owned firms relative to the state and the U. S, with San Jose having the lowest growth at 35%. (Fig. 6.16) However, the women-owned firms in all the California MSAs as well as the state had faster employment and sales growth than in the U. S. (Fig. 6.17 and Fig. 6.18)

Looking only at California, the number of women-owned businesses grew less on a percentage basis in five out of seven MSAs than in the state, but it grew markedly more in the Sacramento MSA (El Dorado, Placer, and Sacramento counties) than in the state. (Fig. 6.16) Why did the number of women-owned companies grow more in the Sacramento MSA than in the other MSAs, which have easier access to much larger markets? At the same time, employment growth in the Sacramento MSA was less than the state average. A possible explanation is that many women-owned businesses in the Sacramento MSA are small home-based businesses, located at considerable distances from the Sacramento urban area. Such businesses typically do not add many new employees. (The Sacramento MSA is more spread out and less densely populated than the other MSAs; two of its counties, El Dorado and Placer, reach all the way to the Nevada border, and El Dorado County touches the shores of Lake Tahoe.)

Employment grew less in four out of seven MSAs than in the state, but it grew much more in the San Diego MSA (San Diego County) than in the state Ð 216% vs. 140%. (Fig. 6.17) Why such strong employment growth in the San Diego MSA? This region certainly has many attributes that have attracted bright newcomers to the state Ð ideal weather, beaches and mountains, a growing and diverse population, and a restructured, more diverse economy. Also, the San Diego MSA has had markedly higher population growth than the state as a whole during the past two decades. In 1998 and 1999, it ranked first in

population growth among the state and the four major economic regions.

Figure 6.16 % Growth in Number of Women-Owned Businesses, 1992-1999 (except for U. S. and California, all regions are MSAs)

Increased trade with Mexico, particularly with Baja California and its maquiladora factories, has been a big factor in employment growth in new and growing companies in San Diego.

The county's bio-medical sector, business and professional management services sectors, and technology sectors have been showing strong growth. Presumably, women business owners are sharing in this growth in sales and employment.

Figure 6.17 % Growth in Employment in Women-Owned Businesses in California Regions, 1992-1999
(except for U. S. and California, all regions are MSAs)

Except for the San Diego MSA (San Diego county) and the Orange MSA (Orange county), percentage growth in sales of all the MSAs was close to that of the state (within five percent). (Fig. 6.18) The San Diego MSA and Orange MSAs were number one and two in both sales growth and employment growth. Orange county has been the star in high-tech growth in the five-county Los Angeles region in recent years. Overall, non-farm employment in Orange county was up 5.0% in 1998 and a 3.5% gain is expected in 1999. The county's bio-medical sector, business and professional management services sectors, and technology sectors have been showing strong growth. Presumably, women business owners are sharing in this growth in sales and employment.

Figure 6.18 % Growth in Sales by Women-Owned Businesses, 1992-1999 (except for U. S. and California, all regions are MSAs)

Figures 6.16, 6.17, and 6.18 show percentage growth in number of firms, employment, and sales, respectively, from 1992 to 1999. Figures 6.19, 6.20, and 6.21 are a snapshot in 1999 of levels, not growth, of the number of women-owned businesses and their employment and sales in the same seven California MSAs. Rather than give absolute levels for each MSA, these charts show the percentages in the seven MSAs of California's 1,240,000 women-owned firms (Fig. 6.19), of their 3,800,000 employees (Fig. 6.20), and of their $549 billion in sales (Fig. 6.21).

The San Jose and Oakland MSAs have equal shares of number of firms, employees, and sales. The Los Angeles-Long Beach MSA, which is number one in size by all three measures, has a relatively lower share of employees than

its share of the number of firms, but a higher share of sales. Possibly, some women-owned firms there are part of the entertainment industry, which produces high-valued output with a smaller number of very skilled employees.

Figure 6.19 Percentage of California's 1,240,000 Women-Owned Firms in 1999, in Selected MSAs

Figure 6.20 Share of the 3,800,000 Employees in California's Women-Owned Firms in 1999 by MSAs

The San Diego MSA is somewhat of an anomaly: its shares of the number of firms and sales are equal, but its share of employees is almost twice as high. A possible explanation for this pattern is that numerous businesses in the San Diego region are engaged in activities tied to the maquiladora plants just across the border in Tijuana. Conceivably these firms hire more relatively lower paid workers who produce relatively lower valued goods.

From 1992 to 1999, the greatest increase in the number of women-owned firms in California was in construction (73%), followed by wholesale trade (62%) and transportation/ communications/ public utilities (57%).

Figure 6.21 Share of the $549 Billion in Sales of California's Women-Owned Firms in 1999 by MSAs

In California, as in the nation as a whole, most women-owned firms are in serv-ices and retail trade. Over half (55%) of the women-owned firms in California are in services, and 16% are in retail trade. This undoubtedly reflects women's traditional orientation away from so-called "men's" technical areas and toward "softer" areas that required "people" skills. However, these traditional directions for women are changing rapidly.

From 1992 to 1999, the greatest increase in the number of women-owned firms in California was in construction (73%), followed by wholesale trade (62%) and transportation/ communications/ public utilities (57%). Growth has been slightly below average (42%) among firms in services (41%) and retail trade (41%). (Fig. 6.22). Traditionally, the construction industry has been a male-dominated industry. Therefore, even a small number of new women-owned

construction firms can result in a high growth rate. In addition to women's increasing selection of civil engineering as their college major, federal equal-opportunity programs have been an important factor in the increase in women-owned construction firms in California.

The fact that the greatest increase in the number of women-owned firms was in construction may be surprising. However, it is an industry to which building contractors all over the nation are trying to attract women. The U. S. Department of Labor Women's Bureau says just 2% of the 4.84 million hands-on construction jobs in the United States are filled by women. Meanwhile, the construction industry faces a serious labor shortage. Another factor fueling the demand for women in the construction industry is federal regulations. To get a share of lucrative federal business, contractors must show that women put in 6.9% of all hours on a project. 94

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Construction is a skilled trade, and women are acquiring these skills rapidly. The Cypress Madela Training Center-Women in Skilled Trades Program is one program that is helping train women. The center was created a decade ago, after the Loma Prieta earthquake had caused the collapse of the Cypress Freeway. Started initially to provide low-income West Oakland residents with the training and skills to be included in the rebuilding process, the center placed 65 graduates in the Cypress reconstruction project. Today, the project has produced close to 700 graduates; it is managed by the Oakland Private Industrial Council.

More women working in the construction business means that more women will get the necessary experience to start their own construction companies, a difficult undertaking without experience in the industry. And there should be a lot of business for their firms. The Commerce Department says the construction industry contributed nearly $329 billion to the economy in 1997, up by nearly $100 billion from just five years before. One industry fore-cast recently predicted construction will rise to nearly $375 billion in 1999.

Figure 6.22 % Growth in Women-Owned Firms in California Ð Highest in Construction

The Commerce Department says the construction industry contributed nearly $329 billion to the economy in 1997, up by nearly $100 billion from just five years before. One industry forecast recently predicted construction will rise to nearly $375 billion in 1999. 95

4. Women-Owned Technology Firms

Women wanting to start their own technology companies face a major impediment: limited access to venture capital. Thirty percent of newly formed women-owned businesses in the United States are in technology-based fields, yet women received just 1.6% of the $33.5 billion invested by venture capitalists from 1991 and 1996.

These statistics ranked high among the factors that motivated Catherine Muther to found the Women's Technology Cluster (WTC), the nation's first business incubator targeted at women starting technology companies. Located in the heart of San Francisco's Multimedia Gulch, the WTC opened in January 1999. Muther believes access to capital is a do-or-die issue for technology firms because the process of developing a product is more expensive there than in the traditional women-owned retail and services businesses. Women have not built the relationships they need to break into the venture capital world. In addition, the VC industry may perceive women-owned technology start-ups as being too risky.

The incubator is designed to house 20 to 30 tech startups. It now occupies 22,000 square feet, more than double its initial 10,000 square feet. The WTC has much in common with the incubators discussed in the chapter on small business. The main difference is that its focus is on women's technology start-ups, with an emphasis on helping their fledgling technology entrepreneurs develop networks and connections with the venture capital community.

5. California Dominates Working Woman **Magazine's Top 500 List of Women-Owned Businesses**

Earlier in this chapter, data from the National Foundation of Women Business Owners was presented that showed women-owned businesses in California have been experiencing faster percentage growth in number of employees and sales than their national counterparts. Working Woman magazine has also been tracking how women-owned businesses are doing in the nation.

The magazine launched the Working Woman 500 in June 1998 and a year later released their second annual ranking. To be included in the Working Woman 500, a business must be owned and run by a woman. The companies are ranked by revenue, with the 1999 ranking based on 1998 revenues. The collective revenues of Working Woman's Top 500 women-owned businesses grew 12% from the previous year to $80.7 billion in 1998.

In this second annual ranking, more than 100 of the companies on the list are based in California, including 37 in the Bay Area. With 108 companies on the list, California has more than double the total of second place New York,

which has 53. Golden West Financial topped the Bay Area contingent with revenue of $3.1 billion. Marion Sandler is co-CEO of the Oakland-based parent of World Savings, which ranked number three nationally on the Working Woman 500 list and has nearly 5,000 employees.

Thirty percent of newly formed women-owned businesses in the United States are in technology-based fields, yet women received just 1.6% of the $33.5 billion invested by venture capitalists from 1991 and 1996.

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Section VI. Contributions of Women to the California Economy

In the aftermath of World War II, the U. S. gained technological supremacy as the rest of the world rebuilt their economies. The Cold War fueled technology growth, as technologies developed for the military often spilled over into business and consumer products. Manufacturing improvements quickly raised the standard of living enjoyed by most of the U. S. blue-collar labor force.

In the aftermath of the Cold War, the U. S. government reduced defense spending, while U. S. companies started to move manufacturing offshore. Companies found less expensive labor in much of the world outside of the U. S. and Europe. Countries in Latin America and Asia, once separated by large distances, became closer as shipping costs declined and labor costs in the U. S. continued to rise. Low wages abroad meant that even with the shipping charges, imported products could be sold at a lower price than domestically produced counterparts. It became apparent that while the U. S. could compete with many of these countries in quality products, raising the standard of living in the U. S. necessitated higher value-added production. This was possible with the emergence and rise of the knowledge and information-based industries Ð the core of the "New Economy." (Fig. 7.1)

Low wages abroad meant that even with the shipping charges, imported products could be sold at a lower price than domestically produced counterparts. It became apparent that while the U. S. could compete with many of these countries in quality products, raising the standard of living in the U. S. necessitated higher value-added production.

Figure 7.1 The New Economy Ð California is "Remaking" Itself Ð Again

A. Background Ð Globalization, Deregulation and Rise of Information Technologies

VII. The New Economy Ð California's Future

1850 1999
Gold Rush Oil Gush Defense Boom Knowledge and Information Based Economy

Established Large Firms
Downsizing or Declining
"Gazelle" Firms Expanding
20% or More a Year (e. g. professional and business services,

internet firms, telecommunications, semiconductors and entertainment)

Globalization, basic research, privatization, deregulation, flexible labor and capital markets, and advances in information technology have all contributed to the emergence of the New Economy.

Since the U. S. enjoys a competitive advantage in high-technology industries, its exports boost sales and earnings, and lead to increased employment, wages, and investment in research in order to maintain technological superiority. For instance, if trade barriers limited Cisco or Intel to selling only to California consumers or only to U. S. consumers, their sales, earnings, and investment in research would all decline. In sum, globalization, through intensifying competition and increasing market size, has been a key factor driving the New Economy.

Deregulation and privatization have also fostered growth in the New Economy. In the last three decades, the U. S. government has partly deregulated the railroad, trucking, airline, telecommunications, and financial services industries; these industries moved from being regulated monopolies in which the government set prices to being competitive industries. Deregulation has generally resulted in lower prices, better services, and innovation which has enhanced U. S. productivity and standard of living. To appreciate the extent that deregulation in other industries benefits the high-tech industry, consider the continued regulation of the U. S. trucking industry Ð in which the government dictated the prices, routes, and terms of service Ð would have stifled the nascent e-commerce industry. Instead, deregulation and the emergence of a competitive trucking industry, led by United Postal Service and FedEx, supports e-commerce by supplying rapid, flexible, just-in-time delivery of products to businesses and consumers.

Deregulation in financial services has meant that government no longer dictates maximum interest rates that banks can charge, a regulation that contributed partially to prior economic cycles. Previously, when market interest rates rose above a certain percentage, banks stopped lending. Since they could not lend profitably, this loss of financial liquidity contributed to recessions. The recent passage of the Glass Steagall Reform Act promises to further improve efficiencies in U. S. financial services markets, improve U. S. productivity, and free savings for investments in fast growing high technology industries.

The information technologies developed in the past decade have also allowed more flexible labor, capital and inventory markets. Just-in-time inventory man-agement, with Dell and, more recently, Apple Computer being notable exam-ples, enables companies to save inventory costs, offer the latest technology, and customize the product to each customer. Meanwhile, mobile labor markets and the availability of temporary workers allow companies to expand and contract as demand warrants. Also, the trend in compensation toward bonuses and stock options means that compensation is more responsive to the financial performance of a company. Finally, flexible capital markets also facilitate productivity and

growth by allowing capital to flow to companies that offer the highest risk-adjusted returns. Innovations in financial services enable companies to obtain capital from various equity and debt markets using a range of financial instruments.

Deregulation and privatization have also fostered growth in the New Economy. In the last three decades, the U. S. government has partly deregulated the railroad, trucking, airline, telecommunications, and financial services industries; these industries moved from being regulated monopolies in which the government set prices to being competitive industries.

Taken together, globalization, deregulation, mobile labor and flexible capital markets, and the development of information technologies have improved U. S. economic performance by all measures: U. S. productivity has doubled from one percent annually during the early 1970s to two percent annually in the mid-1990s; growth in economic output (GDP) has doubled from 2% annually to 4% annually; the U. S. unemployment rate is 4.1%, the lowest rate since 1970; and prices are stable. We may be looking at a period of economic renaissance that is being shaped by what many call the "New Economy."

While the Old Economy was more about "hard" tangible things such as steel, oil and lumber, the New Economy focuses on intangibles such as information, intellect, relationships and communication.

B. The New Economy: What is it?

The so-called Old Economy is driven by familiar industries, such as automo-biles, machine tools, housing, and retailing. The New Economy, on the other hand, is driven by industries such as semiconductors, computers, software, the Internet, telecommunications and biotechnology. While the Old Economy was more about "hard" tangible things such as steel, oil and lumber, the New Economy focuses on intangibles such as information, intellect, relationships and communication. This is not to say that the "hard" things are unnecessary or unimportant. Instead, it implies that hard things are often built around a "soft" core. For example, factories are run by computer commands and millions of otherwise simple devices have "smart" embedded computer chips.

Some of the important manifestations of the New Economy can be seen in several long term trends:

° More people today work in the computer hardware, software, and computer services industries than in the steel, auto, mining, and petroleum industries.

° Nearly 80% of all jobs today involve serving businesses and people through creating and processing information, not making things.

° More than 30% of all jobs are in a state of "churn" Ð either being created or dying as a result of new technology or competition.

° The biotechnology industry employs more people than the machine tools industry.

° Nearly 75% of all new jobs are created by 350,000 "gazelle" firms (businesses that double sales every four years).

° At the end of 1998, IBM's market value was twice that of the cumulative value of Ford, GM, and Boeing; Intel's market value was 50 times greater than Nucor, the highest valued steel company; and the market value of Microsoft (the world's highest valued company) was three times the combined market value of Ford and GM.

But beyond enormous technological and structural changes, what is new about the New Economy? The answer from a fundamental economic perspective is Ð not much. We still work to make a living. We buy and worry about costs. We sell and we worry about revenue. We still have to make choices Ð as there is not enough of all desirable things including talents and abilities. Most of us make a living by working, and scarcity is ever-present amid prosperity.

That aside, there have been enormous technological and structural changes. Knowledge and information, always important, reign supreme in the New Economy.

It is incorrect to think of the New Economy only as a set of industries. The New Economy really entails a new economic environment that has produced enormous wealth. Knowledge, speed, quality, flexibility and networks are the backbone of the New Economy.

Knowledge is the fundamental raw material of the New Economy. Intellectual capital (knowledge embodied in people) is the key source of competitive advantage. While creating knowledge from the information is expensive, the rise in digital mediums such as the Internet are making it easy to duplicate. Thus, publishing a book costs thousands of dollars but reprinting it costs only a few dollars. The cost of producing the latest "Star Wars" movie ran into millions, but we will be able to buy or rent it in our local video store for a few dollars.

Protecting "intellectual property" is a complicated and difficult challenge, but essential in maintaining competitive advantage. The Internet, in a sense, has become a free-for-all global copy machine. Valuable information can be accessed from anywhere at any time and duplicated and communicated via the Internet because of negligible reproduction and distribution costs. There is always the danger of cheap copies replacing the original product, thereby reducing the revenues of the company that created the product. Recent legal tussles between AOL, Sun Microsystems, Microsoft, and other industry giants highlight just how important intellectual property can be and how far companies are willing to go to protect it.

Speed has become the name of the game in the New Economy. Innovative ideas must be transformed to marketable products quickly. Average "time to market" has dropped by half from three years to eighteen months. Input costs become less important and transactions costs are becoming more vital. Firms are more willing to pay high labor and land costs if they are provided with an environment that allows them to achieve greater productivity.

Competing on **quality** is generating a new pricing rule. Simple mark-up pricing (adding a flat rate to the cost of the product) is being replaced by pricing according to value. The value to the customer determines price, not just the cost of production. For example, Web-based investment services may be available for only $10 a month using analysis based on yesterday's market numbers. But a service providing the same analysis using real-time numbers may cost $60 a month. The extra value is derived from the benefits real-time analysis can provide an investor, not that the analysis is necessarily any better of itself.

It is incorrect to think of the New Economy only as a set of industries. The New Economy really entails a new economic environment that has produced enormous wealth. Knowledge, speed, quality, flexibility and networks are the backbone of the New Economy.

Flexibility is essential. Markets are becoming sophisticated and segmented. Firms need to be able to reinvent themselves and their product offerings continuously. Flexibility is achieved by producing highly customized products and services, sometimes called "mass customization." Think of your favorite financial software package, computers built to order, or even Starbucks, and the numerous versions available. Highly customized products and services built around the exact demands of the consumer means that the companies producing for these markets must be able to change their product immediately when customer demand shifts.

One way to achieve the needed flexibility is through **networks.** Networks allow a firm to focus on what it does best and contract out the rest. The web of relationships between companies and individuals forms a collaborative process. Talent and expertise is shared within a geographic area. Businesses of all sizes work together creating the knowledge, speed, quality, and flexibility needed to achieve a competitive advantage.

It was only a few years ago that the Internet was a technological novelty available only to a few
professors and scientists in the military and research universities. As recent as 1996 the Top 15 most visited Web sites included no e-commerce sites and were dominated by education sites!

Figure 7.2 Internet Access by Regions

C. Connectivity Ð Fundamental Attribute of the New Economy Ð Most Businesses Can be Reshaped

The fundamentals of the New Economy require speed of communication Ð the faster the better. The advancements made in the computer and telecommunications industries are allowing much of the transition to take place. It was only a few years ago that the Internet was a technological novelty available only to a few professors and scientists in the military and research universities. As recent as 1996 the Top 15 most visited Web sites included no e-commerce sites and were dominated by education sites! Today more than 171 million people worldwide are online. (Fig. 7.2) The rate at which the Internet has been embraced in the past five years is astounding.

The rise of e-commerce is consistently outpacing even the more optimistic of forecasts. Early 1998 estimates of retail commerce on the Internet suggested it might reach $7 billion by 2000. In fact, that mark has already been surpassed; retail commerce totaled over $8 billion by the end of last year. Newly revised estimates suggest retail commerce on the Internet is likely to reach $40 to $80 billion by 2002, although some groups like Cisco are projecting over $100 billion.

The real promise of e-commerce, however, will be in the business-to-business sales. In 1998 businesses purchased over $43 billion worth of goods on the Net. Forecasters were previously suggesting that business-to-business e-commerce was likely to reach $300 billion by 2002, but are upping those estimates to $1.3 trillion by 2003. Some forecasters are suggesting that even these revised numbers may prove too low.

The size of a business is not the key to success in the new economy. Many think that only small, nimble businesses that are linked will succeed in the new economy. This belief probably comes from the trend of many businesses to downsize and concentrate solely on their core functions. Yet we also see industry giants like Microsoft and Intel being successful. By focusing on their core functions a business is also able to allocate their resources, energies, and management talent efficiently. Successful businesses tend to continually improve technology and service in their core competencies.

More important than size is adaptiveness for remaining successful in the new economy. The telecommunications giants have adapted by acquiring other companies in order to offer a more attractive bundle of services. AT& T recently acquired Media One Cable and various other telecommunications companies in its bid to stay at the top of its industry. This is a pattern that is likely to continue as the communications media (TV, telephone, and the Internet) and entertainment merge.

Most people think that the New Economy is just about high technology. Nearly every community wants high-technology research and high-tech manufacturing in their area. Yet adoption of information technologies enhances the productivity, service, growth, and profitability of other industries, and not just high-tech businesses.

Entertainment and the fashion industries are two examples of industries becoming part of the New Economy. Both are adding value to their products by being original, intensely studying consumer demand, quickening their time-to-market, and paying a premium to acquire the right knowledge workers to push their business forward.

Health care, crime detection, government services, and retail marketing are other areas adapting to the New Economy principles. Major breakthroughs in health care are raising the quality of life of the ill and extending lives. Advanced crime detection techniques such as DNA testing are being applied to courtrooms to improve justice. Governments are attempting to apply information technology to make their services easier to obtain and their

Most people think that the New Economy is just about high technology. Nearly every community wants high-technology research and high-tech manufacturing in their area. Yet adoption of information technologies enhances the productivity, service, growth, and profitability of other industries, and not just high-tech businesses.

We need to make administrative processes less cumbersome, and to encourage economic development
in some cases. Retail centers are using computers and the Internet to create better marketing strategies,
deliver their products faster, and provide advanced levels of service.

Once high-tech companies standardize the production process, they often build factories in nations with lower labor costs. Disk drive production for example was shifted from Silicon Valley to Mexico, Hungary, and Japan by IBM and from Silicon Valley to Malaysia by Quantum Ð the number two-disk drive maker worldwide. Many firms are now outsourcing programming tasks to offshore firms in Singapore, India and even Jamaica.

While production moves to lower-cost areas, Silicon Valley and other high tech areas focus on designing improvements in technology and creation of high value-added products and services. A high-tech center fosters creativity and synergy as experts from different fields learn from one another. For instance, IBM and Quantum retained their development and design teams in the Silicon Valley, while moving their manufacturing facilities to other parts of the U. S. and the world.

Figure 7.3 Basic Research in the U. S. 1987 to 1997
(as a percentage of GDP)

D. Research is Driving Innovation
Key to Success in the New Economy
Research is one of the fundamental drivers of the New Economy, as it enables companies to remain competitive by transferring information into ideas, and ideas into products. A steady stream of research leads to a steady stream of innovations and that leads to products and services the whole world wants. Total funding for basic research in the U. S. rose in the early 1990s to 4.5% of GDP but fell just as quickly to previous levels of about 3.8%. (Fig. 7.3)

Research is one of the fundamental drivers of the New Economy, as it enables companies to remain competitive by transferring information into ideas, and ideas into products.(Basic research is original investigation for he advancement of scientific knowledge, usually without specific commercial objectives). Basic research
is often the foundation work that leads to more marketable ideas. Many of today's key inventions and innovations were created in long-term basic research programs. The Internet is a good example Ð it was developed through the Department of Defense 25 years before it was made useful to the commercial community.

Charles Jones of Stanford University and John Williams of the Federal Reserve estimated that research and development has yielded a 30% return to society historically, compared to physical capital investment that yields between 8% and 10%. The public and private sectors spent $220.6 billion in 1998 on research and development. Jones and Williams estimated that by investing as much as four times more, the U. S. could raise its long-term economic growth rate significantly and maintain its competitive edge in the New Economy globally.

Currently there is a concern that the government is not spending enough on basic research. The government's share of all monies spent fell from 50% in 1978 to just 30% in 1998. The concern stems from the fact that corporations do not do enough basic research, and instead focus on short-term solutions for their market (e. g. developing the next silicon chip, or enhancing the latest product with more functionality). Although by 1997 corporate investment in research performed at U. S. universities reached $1.05 billion, a 20% increase since 1991, that is still only a small share of total corporate research funding.

While increased corporate funding of university research leads to many valuable innovations, a major risk is that declining public funding of basic research at universities will lead to a subsequent decline in fundamental scientific discoveries that ultimately improve our quality of life and economic vitality.

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Figure 7.4 Total Internet Users Worldwide 1998 to 2003 (millions) 106

E. The Internet in the Center Stage of the New Economy

The Internet allows information to be copied and transmitted virtually instantly, accurately, and with little or no cost. History suggests that advances in informa-tion technology have transformed societies and economies, whether it be ancient Sumerians developing clay tablets, Egyptians turning papyrus plants into paper-like scrolls, Greeks making parchments from the skins of goats and sheep, Chinese inventing paper, or Johann Gutenberg inventing the printing press in 1455, or to more recent inventions such as the telegraph, telephone, radio, and television. For instance, the replacement of hand-copying with Gutenberg's printing press transformed Europe from the Dark Ages to the Renaissance by reducing the cost and improving the accuracy and speed of information. This allowed learning to extend beyond a few clergy to scholars and scientists in different countries. They could read about and thus build upon the inventions and writings of leaders of the scientific revolution such as Bacon, Keppler and Galileo. Similarly, the Internet accelerates learning and discovery by reducing the cost and increasing the accuracy and speed of transmitting information and ideas.

Much technology is cumulative; it builds upon previous inventions. Many inventions involve first understanding the current state-of-the-art technology and then improving upon it. As Isaac Newton said, "if I have accomplished much, it is because I have stood on the shoulders of giants." The Internet speeds innovation by instantaneously and accurately making available the designs of much current technology. Accelerating innovation is only one way that the Internet is fostering a modern renaissance.

The Internet allows information to be copied and transmitted virtually instantly, accurately, and with little or no cost. History suggests that advances in information technology have transformed societies and economies.

Figure 7.5 The Internet Industry

Develop software solutions designed to enhance the Internet experience for both consumers and businesses. Create hardware and software solutions that enable the efficient operation of the internet

Consumer Businesses The Internet
Software Solutions Enabling Technologies
Access Providers Internet Services
E-Tailers Content Services

Alternative Media E-Channels

Businesses and consumers are brought together on the Internet through a collaboration of various technologies and creative energies. Consumers use access providers such as Mindspring to gain access to the Internet. The content they see, however, is developed through various types of businesses including e-commerce stores, media outlets including newspapers and CNN, and through traditional retail outlets that have established an e-commerce side of their business such as The Gap. The Internet experience is made possible by a host of companies such as Cisco Systems that provide the soft-ware solutions and other technologies that go into the physical formation of the giant network making up the Internet. The connectivity afforded by the Internet and high bandwidth connections are fundamental to many of the cost-saving opportunities of the present and the future. E-mail and Web sites such as WebEx. com allow business partners to work together instantaneously without being in the same geographic location. The Internet also allows businesses to exist without a physical location where customers come to shop. The reduced overhead expenses give Internet stores some advantage over their traditional counterparts. Finally, much of the data warehousing technology that is linked to the Internet allows "mass customization." Firms are able to target their products and their advertisements on a person-by-person basis. All of these factors cut business costs and add potential to turn vast databases of information into productive knowledge.

Figure 7.6 Internet IPO Activity
January 1, 1997 to March 31, 1999 (number of IPOs by region)

Like radio and network TV, much of the money made on the Internet is through advertising. Advertising on the Internet has great potential because it can be made extremely specialized for each user. But unlike radio and TV, where the number of stations is limited in a geographic region, the Internet's reach is enormous.

The profitability of the Internet is also an eye-opening transition for established businesses. To remain competitive, businesses are compelled to adapt to the Internet. For example, Merrill Lynch, one of the world's largest investment brokerage, recently announced that it will offer on-line trading. Merrill's offer is largely in response to observing millions of investors open accounts with on-line brokers, many based in the San Francisco Bay Area, including Charles Schwab, E* Trade, and Morgan Stanley Dean Witter Online. When competitors offer attractive Internet-based services, retailers must also adapt or risk losing customers and market share.

The profitability of the Internet is also an eye-opening transition for established businesses.
To remain competitive, businesses are compelled to adapt to the Internet.

Figure 7.7 Total Venture Capital Financing in Silicon Valley 1990 to 1999* (billions)

Figure 7.8 Most Valuable Bay Area IPOs of 1999
Market Value in Millions at the Close of Trading January 5, 2000

F. Urban centers have a Competitive Advantage in the New Economy
The Milken Institute recently released the study America's High-Tech Economy, a study of the Top Technology Centers in the U. S. It found that metro areas in general have a competitive advantage in the New Economy because they have a disproportionate share of the high-tech industry. (Fig. 7.10) It also found that metro areas with the highest growth are the ones that have demonstrated skill and ability in attracting, nurturing, and expanding high-tech based industry clusters.

Metro areas with the highest growth are the ones that have demonstrated skill and ability in attracting, nurturing, and expanding high-tech based industry clusters.

Figure 7.9 Silicon Valley IPOs and M& As 1990 to 1999
Figure 7.10 Access to Talent Mentioned as Location Driver by Internet Executives

Key Attributes of Successful High-Tech Metro Areas
° The presence of a premier research university
° Access to a trained and educated workforce
° The availability of venture capital
° Climate and quality of life
° Overall cost of living

Many of these technology centers were started around a premier research university. The San Francisco Bay Area has several world-class institutions including Stanford University, the University of California at Berkeley, and the U. C. Medical Center in San Francisco. The educated workforce and the entrepreneurial leaders that come out of the nearby institutions have been as important as the vast amount of world-class research conducted in these institutions. New Economy businesses need a skilled workforce and one that is willing and able to continually retrain itself.

A vast network of informal connections also characterizes many of these urban centers. The network grows from the high-velocity workforce, where

employees switch between jobs quickly. The proximity of businesses allows workers to maintain relationships in addition to those in their immediate work environment. The knowledge acquired in one job is retained and often put to use in a new position. New partnerships between businesses are often able to form quickly from these relationships and interrelations.

A more striking conclusion found in the study was that many businesses were willing to pay higher "costs-of-doing-business" expenses including higher taxes, office space costs, energy costs, and capital costs in order to be near the center of activity and interaction among technical experts, entrepreneurs and venture capitalists. The proximity and participation in the informal relation-ships gave businesses enough of a competitive edge that high costs of location are justifiable.

San Francisco Bay Area is the prime example of such a location. It is one of the most expensive places in the country to run a business, yet it is also the most concentrated technology region in the country. This may be in part because the high cost of doing business forces out less profitable and inadequately financed companies. Competition for resources helps to keep the area on the cutting edge of technological advancements.

This discussion does not imply that all technology growth will occur in urban centers. Many firms are choosing smaller communities, a pattern that is evident as Silicon Valley expands into nearby communities and the Central Valley. Central to their decision is being able to provide quality of life to their employees. It is, of course, easy for many high-tech businesses to move away from metro areas since they are "footloose." What they need in the new location is access to telecommunications infrastructure, a good work force, educational facilities, and a good quality of life. Regions that have an advantage in these areas will be able to exploit them in drawing new businesses from congested metro areas.

The educated workforce and the entrepreneurial leaders that come out of the nearby institutions have been as important as the vast amount of world-class research conducted in these institutions. New Economy businesses need a skilled workforce and one that is willing and able to continually retrain itself.

G. California in the New Economy Ð
The High-Tech Capital
California has continued to add to the number of New Economy jobs. (Fig. 7.11) High technology and New Economy jobs in California reached over 784,000 by September 1999, more than double second-place Texas. High-technology manufacturing in 1999 is forecast to decline 1.8%, but creativity in service and Internet-related enterprises has continued to drive the overall growth of the New Economy industries.

High-technology manufacturing in 1999 is forecast to decline 1.8%, but creativity in service and Internet related enterprises has continued to drive the overall growth of the New Economy industries.

Figure 7.11 High Technology Employment Ð Leading States
Number of Jobs by State, 1999

Table 7.1 Bay Area Productivity and Employment
Ranking* (1 = most competitive region)
Employment Concentration Output per Employee
Industry Cluster 1995 1998 1993 1998
Environmental 1 2 2 1
Technology

Bioscience 2 1 1 1
Telecommunications 1 1 1 1
Multimedia 2 2 2 1
Computers & Electronics 1 2 2 1
Source: Regional Financial Associates; U. S. Bureau of Economic Analysis; U. S. Bureau of Labor Statistics

Silicon Valley is the object of envy for the rest of the U. S. and the world. Other regions have tried to incorporate their own "Silicon" moniker. Some of the names include Silicon Forest, Silicon Prairie, Silicon Mesa, Silicon Desert, Silicon Fen, Silicon Alley, Silicon Bog, Silicon Glen, and Silicon Wadi. The pattern is part hype, part marketing, and part competition, but it shows that very few cities, regions, and countries want to be left out of the digital revolution. Silicon Valley is the model of the New Economy region that they would want to emulate.

In addition to Silicon Valley, California has five other major high-tech centers that rank in the top
20 nationwide. California also leads all states in the total number of high-tech jobs. As a

state, California
produces over 17% of the nation's high-tech output each year.

Table 7.2 Top 20 High-Tech Metropolitan Areas by Size
Percent of National High-Tech Real Output 1998

Rank	Metro	Percent
1	San Jose, CA	5.79
2	Los Angeles/ Long Beach, CA	5.11
3	New York, NY	4.23
4	Boston, MA	4.18
5	Chicago, IL	3.76
6	Dallas, TX	3.67
7	Washington, DC-MD-VA-WV	3.50
8	Atlanta, GA	2.53
9	Seattle-Bellevue-Everett, WA	2.52
10	Philadelphia, PA	2.09
11	Orange County, CA	1.85
12	Houston, TX	1.84
13	Phoenix-Mesa, AZ	1.78
14	Oakland, CA	1.55
15	Middlesex-Somerset-Hunterdon, NJ	1.48
16	San Francisco, CA	1.45
17	San Diego, CA	1.41
18	Albuquerque, NM	1.40
19	Newark, NJ	1.35
20	Denver, CO	1.30

Sources: Milken Institute, Regional Financial Associates

In addition to Silicon Valley, California has five other major high-tech centers that rank in the top 20 nationwide. California also leads all states in the total number of high-tech jobs. As a state, California produces over 17% of the nation's high-tech output each year.

California's success in developing technology is due in part to the availability of venture capital. In 1998, firms in Silicon Valley received roughly $4 billion in venture capital, 28% of all the venture capital investment in the U. S. The

region receiving the next highest amount was Boston's "Route 128," which received 13%, or $1.8 billion.

Venture capitalists and entrepreneurs work together in a cooperative environ-ment in Silicon Valley. Entrepreneurs bring together leading-edge ideas, technical talent, and their willingness to take on risk. Venture capitalists provide important links to management skill, tech-savvy lawyers and account-ants, and potential business partners. In this manner venture capital feeds creative energies. It allows creative ideas to be brought to fruition and the development of new ideas to continue unabated.

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Figure 7.12 Bay Area Venture Capital Investments 1994 and 1998
(millions of dollars)

Figure 7.13 Marriage of Entrepreneurs and Capital
Source: Internet Cluster Analysis, Joint Venture Silicon Valley Network

Entrepreneurs Capital
Silicon Valley

° Leading Edge Ideas
° Proven Management
° Technical Talent
° Risk Tolerance

Access to:
° Management Expertise
° Tech savvy Lawyers & Accountants
° Technical Talent
° Potential Business Partners

Venture capital investment in a business is also a good indication that a firm has a strong potential for high growth rates in five to 10 years. Silicon Valley's continued ability to attract venture capital funding is a leading indicator of the shape of things to come Ð the region will continue to lead the high-tech world in new ideas and products.

The "half-life" of new businesses, that is the time it takes 50% of companies started in a particular year to go out of business, has more than been cut in half since 1970. The process of attrition that used to take five years in 1970 now takes less than two years.

Figure 7.14 Average Annual Wage per Worker

H. The Changing Workplace Ð Promise and a Challenge

A high-velocity labor market is a characteristic of the New Economy. Trained individuals are able to move between businesses and industries according to the latest trends. This is an exciting as well as a frightening prospect for many of today's workers. The New Economy has created tremendous opportunities for advancement, but it has also increased employment instability and career volatility.

In the coming 21st Century Economy, venture capital will move quickly towards its most productive uses. This vigorous churning of the economy creates a new business landscape. Studies now suggest that the regions with the best economic health and the fastest growing job base are also the regions with the shortest business life expectancy. This results from the large number of business start-ups and the failure of many of those start-ups.

A corollary to the previous findings is that the "half-life" of new businesses, that is the time it takes 50% of companies started in a particular year to go out of business, has more than been cut in half since 1970. The process of attrition that used to take five years in 1970 now takes less than two years.

Of course more businesses shutting their doors also means a high degree of instability for workers. Shifting from job to job often means financial instability, reduced retirement benefits, and the need to relocate. Workers often commute longer distances instead of moving with each job change as this erodes a worker's quality of life.

All this job switching also requires today's workers to keep themselves adequately trained for their next opportunity. The name of the game is continuous learning. The New Economy moves investments towards the more productive firms using the most productive technologies. Workers know that to take part in these shifts and moves, they must continually develop their own skill-set so they are ready when the opportunity comes. Shortages in qualified workers in IT fields has meant that businesses have been willing to take on part of the retraining process. Workers who learn fast and often are the most marketable and they take home the biggest paychecks.

All this job switching also requires today's workers to keep themselves adequately trained for their next

opportunity. The name of the game is continuous learning. The New Economy moves investments towards the more productive firms using the most productive technologies.

Figure 7.15 Silicon Valley and U. S. Average Per Employee Wage
1999 Dollars

Figure 7.16 Silicon Valley Average Per Employee Wage
Hi-Tech Industries 1998

The shorter tenure of most workers is a double-edged sword for employers. When employees leave, employers must go to the expense of hiring and training a replacement. Businesses are finding that it is cheaper to avoid the costs of hiring and training a new employee by offering retention incentives to employees. Retention efforts include higher salaries, stock options redeemable after a specified time with the company, a company car, or special in-office perks such as flextime.

Salary pressures are strong in high-tech fields with wages rising much faster than in other sectors of the economy. The expected continued strong demand relative to supply of IT workers suggests that compensation will continue to rise for the next several years.

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Figure 7.17 Annual Growth
(%) of Average Wages and Jobs in Silicon Valley

I. Quality of Life a Key Concern in the New Economy
The strong emphasis on communication and connectivity places enormous pressures on the personal lives of workers in the New Economy. Cell phones, pagers, e-mail, and PC's blur the line of separation between work and home life. Leisure time is being lost.

In fact, many of the high-tech start-ups intentionally blur the line between home and office. New Internet companies are known for allowing pets at work, having cubicle decoration contests, allowing extremely causal dress Ð sometimes not even requiring shoes Ð giving their workers pillows, providing an endless supply of caffeinated drinks and sugar snacks, installing video games in the hallways, arranging massages on demand, setting up on-site yoga sessions, and giving access to the high-speed T1 lines for personal "Net surfing" use. Companies are using the "work-is-play" environment as an

enticement for working long hours at lower than industry-standard wages. The trend is toward "work as a lifestyle."

What do workers expect to get out of the deal? Stock options worth millions of dollars. Many young employees want to be involved in the hottest Internet start-up, see their company turn into a big IPO, and then cash in for an early retirement or moving to the next Internet Gold Rush. Reality shows that less than one in 10 start-ups turn the IPO corner. The majority of the employees at these start-ups are not even staying on long enough to cash in their stock options (usually about four years are required for that).

Many high-tech workers are bucking the trend to move to urban centers, preferring instead the suburban lifestyle. Employers in Silicon Valley have, at times, commented that they are training the country's workforce because so many employees leave for other regions of the country. Traffic congestion, the lack of affordable housing, and lengthy commutes are dissatisfying to most workers. As preference for living in smaller communities grows, many large firms are moving some of their facilities to smaller communities in an effort to retain workers.

Many high-tech workers are bucking the trend to move to urban centers, preferring instead the suburban lifestyle. Employers in Silicon Valley have, at times, commented that they are training the country's workforce because so many employees leave for other regions of the country.

Figure 7.18 Key Economic Development Factors
1. Proximity to Airport
2. Physical Environment
3. Transportation
4. Proximity to College/ University
5. K-12 Education
6. Housing Affordability

7. Health Care
8. Cultural Amenities
9. Recreational Amenities
10. Cost of Living
11. Two Career Family Opportunity
12. Climate

Source: "Understanding the Bay Area's Quality of Life," Greenbelt Alliance and PG& E, 1990

Figure 7.19 Location of High-Tech Companies in Oakland
Transition to the New Economy

Munroe Consulting Inc.

J. Privacy and Freedom of Expression in the New Economy
As information technology makes it easier for companies to gather personal information, many individuals feel that their private lives are being invaded. A recent poll by Peter D. Hart Research Associates found that 80% of adults surveyed expressed concern that the Internet and computers were a major source of privacy loss. Privacy concerns in the New Economy are serious and need to be dealt with on several levels.

Many people are bothered by the intensive efforts of businesses to garner private information about the people who use their products. Web sites can be created to track the pages a user looks at, to watch buying patterns, and to collect information through surveys. The practice of requiring users to enter personal information before receiving "free" use of the material on a Web site is becoming increasingly popular. As this information is bought and sold, consumers fear being inundated with unwanted advertising.

Another privacy concern for many is the use of credit card numbers and Social Security numbers. As these sensitive numbers are passed on the Internet some people fear they will fall into the wrong hands. On the contrary, trans-actions using credit cards tend to be much safer on the Internet than via a telephone conversion or mail order where several extra pairs of eyes and ears can see and hear the private information. Current 120-bit encryption level browsers can also keep information secure from hackers. Consumers need to be aware of the security level of the e-commerce sites they use and avoid the ones that do not offer secure connections.

Hackers in general are of great concern to many individuals and to many businesses. Encryption, firewalls, and a healthy respect for the secrecy of pass-words can lock out most of the problems associated with hacking. Yet given the persistence of hackers in using advanced technologies to break into private networks, security will remain a major challenge.

Many businesses track their employees, and employees fear a loss in privacy. Listening in on phone calls, monitoring e-mail and Internet use, and using hidden cameras have become common practices. A survey by the American Management Association in 1997 found that 60% of large firms surveyed were monitoring employees via their e-mail and telephone conversations.

Health care and insurance agencies also want to monitor private information. Governments already monitor international satellite communications and

would like to have more ability to monitor Internet transactions and commu-nications ostensibly to deter crime and espionage.

New protocols are being developed regularly to help in the battle against privacy intrusion. One such advance is the P3P computer language that allows networks to communicate. The World Wide Web Consortium recently proposed P3P as way for clients to determine the level of privacy they wish to maintain.

Privacy concerns in the New Economy are serious and need to be dealt with on several levels.

Many people are bothered by the intensive efforts of businesses to garner private information about the people who use their products.

Yet in a world that depends on connectivity, it is difficult to avoid loss of privacy. In fact, choosing not to share private information would inhibit much of our social interaction, not to mention keep us from being able to receive important services like adequate health care. To buy things we need, to tell the vendor what it is we want. To have the help of a physician we must explain what is bothering us. To share in a mutually beneficial partnership we need to be willing to share as much information as we would want to trust our partner. Consumer protection laws, such as provisions included in the recently passed Glass Steagall Banking Reform Act, may help to protect privacy. But as tech-nology evolves, customers will inevitably need to place a certain trust in the reputation of service providers. If the high-tech community does not continue to take the lead role in ensuring the protection of confidential personal information, such as financial and medical information, then the government surely will.

Freedom of speech allows the Internet to be used by all groups equally. The extent of connectivity available in the New Economy also facilitates the dissemination of hate-speeches and pornography and for hate-groups to recruit participants previously separated by long distances. With the greater connectivity of the Internet, the crucial challenge is to preserve freedom and access to information, avoid intrusive government regulations, while main-taining adequate protections, especially for children.

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, especially for children.

K. Additional Challenges of the New Economy

In addition to the quality of life, privacy, and freedoms issues, other challenges of the New Economy include training a skilled labor force, reducing trade barriers, limiting income inequality, and minimizing the effects of stock price volatility.

Silicon Valley is critically dependent on talented individuals educated outside of California. According to a June 1999 report from AnnaLee Saxenian of the Public Policy Institute of California, from 1995 to 1998, 25% of Silicon Valley startups were by Chinese or Indian migrants. In 1998, Indians or Chinese headed 2,775 Silicon Valley high-tech firms, employing 58,000 people, with total sales of 16.8 billion. According to Tim Draper, a Silicon Valley venture capitalist, "If I go through my list of entrepreneurs, I'd say 60% are immigrants, people from China, India, Pakistan, and Israel. And the rest are [native born] Americans." But not, he implies, grown-up California school children.É" Those entrepreneurs have to hire people from the outside

too because the people being educated here aren't getting to the level they need to get a real job in the new economy." A risk to Silicon Valley and other high tech centers is that prosperous economies overseas will eventually induce their talented citizens to stay in their home nation. If so, Silicon Valley will need to increasingly rely on workers educated in California or, at least in the U. S., which will intensify the need to improve education drastically in California.

U. S. high technology companies' sales and profits have benefited from rising exports. Yet a risk is that other nations could raise trade barriers on U. S. high technology exports. In an effort to protect U. S. workers in steel and other industries from low-priced imports, the U. S. government has enforced "anti-dumping" laws, which prohibit nations from selling products in the U. S. at prices lower than the prices the products are sold in the home nation. In response to such U. S. government efforts to protect U. S. workers in certain industries, other nations could increase tariffs and other barriers on U. S. high technology exports. Any increase in trade protectionism could significantly limit the growth of US high-technology industries.

Income inequality is an emerging issue as Silicon Valley is increasingly polar-ized into the high-technology employees with attractive salaries and stock options versus the support employees such as waiters and guards. In an effort to improve wages of support workers, some groups have proposed that govern-ment require all employers offer "living wages." Great income inequality, besides being undesirable in itself, can fuel tension and discontent, and affect corporate performances, as well as community livability.

Spiraling stock prices have enabled high-tech companies to expand rapidly by raising capital in initial and secondary public offerings and also to use its stock to acquire other companies. Valuations of Internet companies are highly volatile given that the amount and timing of future earnings are highly uncer-tain, as many companies have yet to turn a profit (one of the most notable is Amazon. com). One risk is that spiraling stock prices will result in over expan-sion such that profits elude companies for longer than anticipated, contributing to a sharp decline in stock prices, which at least temporarily could reduce growth and employment prospects.

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Roundtable on the New Economy Sponsored by PG& E
October 26, 1999 Hyatt Regency Embarcadero Marina Room In Attendance:
Pacific Gas & Electric Company
Guillermo Rodriquez (GR): Manager, External Relations Department

Tim Leong (TL): External Relations Department

Gary Craft (GC): Principal, Craft Consulting Group, Lafayette, CA

Adele Hayutin (AH): Chief Economist, Fremont Group, San Francisco, CA

Dr. Walter Hoadley (WH): Senior Fellow, Hoover Institution, Stanford, CA

Steve PonTell (SP): Director, La Jolla Institute, La Jolla, CA

Dr. Sean Randolph (SR): President, Bay Area Economic Forum (BAEF), San Francisco, CA

Dr. Mark Schniepp (MS): Director, UCSB Forecasting Project, UC Santa Barbara, Santa Barbara, CA

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Deborah Hall (DH): Administrative Assistant, Arrangements

Dr. Tapan Munroe Adele Hayutin Dr. Sean Randolph

Steve PonTell Gary Craft Dr. Mark Schniepp **The table round** on the New Economy Guillermo Rodriguez
to bring together a select group of experts to identify and discuss key California economic issues

GR: PG& E has an interest in a prosperous California economy because when California prospers, PG& E
prospers. PG& E has supported and offered guidance to numerous economic vitality programs for the state.
In that same spirit, PG& E produces an annual California economic report Ð of which this roundtable meeting will be a part to help capture emerging trends and opportunities in the California economy. The questions we are interested in answering
are: What is new about the California economy? What factors propel the economies of California, its
regions, and the nation? What are the trends that will affect California during the next decade?

What do these trends mean? How can the knowledge obtained be applied? An important application would
be to help guide public policy. For example, an important current public policy issue facing California is
what to do with the bountiful surpluses in the California tax coffers that the strong economy has
yielded. Certainly a candidate for some of these funds could be California's pressing infrastructure needs.

A major objective of PG& E in supporting activities like its annual economic report is to make

relevant and useful economic analysis available to private, as well as public decision makers.

TM: Economists must add value to be relevant and worthwhile. For example, economists that spout abstruse economic theories that do not have practical and useful applications will not find significant demand for their services in the marketplace. Business economists today should, of course, be thinking about next year, but they should also be looking 5-10 years ahead.

WH: The average Californian has experienced such relatively good economic times for an extended period that they have almost forgotten that things can change, with bad economic times returning. Nowadays, the average Californian feels cocky and almost invulnerable; they can't imagine that cracks can open up in our apparently strong economy.

Economists are hampered by bad data in trying to understand and interpret the economy. The data system they are working with was designed for a turn-of-the-century manufacturing economy, but the California and U. S. economies are now mostly service-based economies. We are indeed a new economy, and we need to rethink our data system.

What might cause cracks to appear in the economy? Non-economic forces are more likely to be the cause than economic forces. For example, as California's demographic make-up changes, there are growing possibilities for cultural splits and gaps and for the hardening of boundaries between cultural/ ethnic groups; these developments could result in social unrest. The population issue, itself, contains many problematic facets. A growing population militates toward more congestion and heavier use of limited resources. Sustainability is a key issue for our future.

TM: Most economic expansions come to an end because of shocks, rather than because they just simply fizzle out.

California is becoming increasingly bifurcated along socio-economic lines. There is a growing income gap

even in our most prosperous regions such as the Bay Area. There is also the connectivity gap. In this

Information Age, access to the Internet is critical. Yet there are significant gaps in Internet access related
to household income, ethnicity, age, and urban vs. rural. These demographic gaps can be explained in
terms of two underlying basic determinants of connectivity: income and education.

There are also geographic gaps in California. Just 100 or so miles inland, a Third World economy exists in
parts of the Central Valley; the Sacramento Region, which is highly inter-linked to the S. F. Bay Area, is a
notable exception.

AH: The Bay Area has a higher median income than the rest of California and the rest of the U. S. Moreover,
the Bay Area is different in terms of the number of rich people who reside here. This may cause the Bay Area
to be somewhat "out of touch" with the rest of the state and the nation.

California, the seventh largest economy in the world in terms of GDP/ GSP, has a different demographic
make-up than G-7 nations. In particular, the state and the nation have populations that are both younger and
growing faster than those of other industrialized nations. This gives California and the U. S. a potential
labor force advantage, a labor "pipeline." However, this potential advantage can't be effectively tapped
unless the young labor force receives a good education. Providing quality public K-12 education is a
serious challenge for both California and the nation.

There is a growing gap between the haves and the have-nots, and riots, like those in Watts in Los Angeles,
are not unthinkable in the future.

The services component of California's economy is increasing, but there may not be enough appropriately
trained workers to fill the various jobs in the service economy. The state needs to import more workers to
keep the economic engine moving.

California's current population of 34 million is expected to grow by 18 million more people during the next 25
years. This will require a huge investment in physical and social infrastructure, including

housing and
education. But, growth limitations may impede this necessary augmentation.

TM: Growth limitations are not just a possibility in the future; they are already on the ballot in the Tri-Valley
area for this November election; the measure is referred to as CAPP, Citizens Alliance for Public
Planning. Such measures directly limit economic activity in the Bay Area. However, uncontrolled growth
can indirectly limit economic growth because it can erode the region's quality of life, thus undermining an
important site location factor that high-tech businesses evaluate when considering whether to locate a facility
in the Bay Area and/ or California. (The voters rejected the growth limiting ballot initiatives.)

The much-cited labor shortage is really a training/ skills issue, rather than an absolute shortage-of-bodies constraint.

SP: The Sierra Club has been taking an active role on growth limits. For example, it recently announced plans to put an anti-sprawl initiative on the November 2000 ballot in Alameda County that would ban development throughout much of the eastern part of the county. However, the Green lining Coalition, which is aligned with inner-city groups, has strongly attacked
the Sierra Club's position. Effectively, inner-city groups are now pitted against environmentalist groups.

The housing situation is critical in many parts of California. In Los Angeles County, for example, there
are 16 new residents for each new house. What kinds of neighborhoods will this situation create?

As the New Economy evolves, relationships are changing between business and the community and between
business and government. Two of these changing relationships that will be important to monitor during
the next ten years are:

1) The relationship between Corporations and communities is changing. Traditional large Corporations
encouraged their officers to be involved in community organizations such as the Rotary and Kiwanis.
However, corporate membership in such organizations has been declining. New Economy firms do not have
time for traditional corporate involvement in the community. The pace of activity in the

New Economy
is faster than before, and product lives are much shorter.

Traditional firms, e. g., a steel mill, were more infra-structure dependent than today's information-age firms
were. Thus, they had greater incentive to be highly involved with the community where they were located
since that community provided infrastructure. However, today's information-age companies, e.g., an
E-Commerce firm, are much less infrastructure dependent and can pick up and go elsewhere more easily.

It will be a challenge in the New Economy for business and communities to craft an arrangement that achieves
consistent, sustained involvement by business in the community.

2) The relationship between government, particularly local government, and the economy is changing.
Local government has traditionally relied on local sales taxes as a major revenue source. However, factors in
the New Economy, e. g., retail sales via E-Commerce, have contributed to lowering the percentage of goods
sold that are taxable from 60%-65% to 40%-45%. As a result, many local governments, still caught in old
paradigm revenue-raising methods, are trying to attract trade firms to their jurisdiction. These local governments
are really fighting over a shrinking pie.

There will likely be increased migration to inland California, specifically the Central Valley, over the
next several decades as California adds some twenty million new residents. Anticipating this migration, the
La Jolla Institute has studied four Central Valley cities to learn how their economies could be diversified to
provide jobs ideally well-paying jobs for new CV residents. Double-digit unemployment rates have been
common in these regions and have persisted even as unemployment rates have fallen below four percent in
coastal urban areas. The Institute found, however, that there are powerful agri-business interests in the
Central Valley that are comfortable with unemployment rates as high as 25 percent.

TM: There are agricultural and financial interests in the CV that see diversification of the economy as a
threat to their agricultural lifestyle. This may be an impediment to much needed

diversification of the
Valley economy.

SR: A recent up-date of a BAEF study of the relative competitiveness of regions throughout the U. S. indicates
a number of large urban areas (e. g., PMSAs) that have a comparative advantage due to their particular clus-ter-
based economies. For local governments to be able to stimulate their urban economies, they must under-stand
what clusters give the region a comparative advantage and try to grow, retain, and attract businesses
that complement these strengths.

Corporations do feel that they have a stake in the community. But to get involved, they have to perceive that
the competitive environment is such that it is in their self-interest to be involved in the community.

GR: PG& E has worked to get Silicon Valley firms
more involved in the Bay Area community. But it continues to be a struggle. Citing their busy schedules and
fast-paced industries, Silicon Valley executives are reluctant to attend community meetings.

SP: A recent study of New Economy business leaders in Southern California shows that they see themselves
as very action-oriented and don't have time to be members of committees. They are very self centered; the
leaders themselves don't even get together.

TM: Oakland illustrates this issue. There is a CEO council, which historically has been dominated by
executives from Old Economy companies such as Clorox and APL. Such companies have a tradition of
community involvement. Although unknown to many, today Oakland also has a sizable number of New
Economy, high-tech firms. A recent survey counted about 300, of which some 100 are significant.
However, these new firms do not have a tradition of community involvement. (In many cases they do not
have the means.) Rather, they are consumed by their work and are passionate about it; it has sense of immediacy
for them. They are not anti-community involvement; rather they are just so absorbed by the fast pace
of their industries that the option of community involvement is not in their mindset.

Bigger and more established high-tech are an exception to the trend. Take, for example, Cisco Systems, a high-tech firm that makes hardware for the Internet. Cisco is already an established successful firm, and they "have a cushion" to do more philanthropic activities, and they are widely engaged in educational initiatives throughout the state and beyond.

SR: We have had similar experiences at the BAEF. Young high-tech firms, e. g., in E-Commerce or Multimedia, have neither the time nor resources to get involved in their communities. It is not that they are not interested; they just do not have time.

SP: In a broad sense, self-interest is what always has motivated and continues to motivate Corporations to be involved in their communities and in issues beyond the immediate interests of their firms. However, the perceived self-interest of today's New Economy firms is different than that of traditional firms. For example, a vital infrastructure concern of traditional companies in California has been water; however, it is difficult to get New Economy firms excited about this issue. They seem to have an attitude, "If it doesn't work out, I'm out of here." MS: The national economy would be more interesting to discuss since it has more potential problems than the California economy, which seems to be relatively free of them. So far this year, California has not shown any signs of a slowdown or weakness. January-June 1999 data shows this clearly, and third quarter data (July-September) also supports this view of the California economy. And even though the Federal Reserve has raised interest rates which usually has a big effect on housing and auto sales there has not been a let-up in these sales.

The consumer has definitely been the driving force in California's continued economic strengths. And this is not likely to change since it is being largely driven by the baby-boomer generation, who apparently have no intention of curtailing their spending Ð even if this entails little or no savings. Also, the Boomers plan to work much longer than preceding generations and don't even want to retire; perhaps concerns about the Social Security System are a factor here.

The year 2000 will be a little bit slower than 1999, with job growth of 2.6% compared to 3% in 1999. In short, it will be a good year, just a little slower.

The future decade should see more movement to the Central Valley, which has space and lower costs. Many coastal urban areas are pretty much built-out, and housing prices there are ridiculous.

In Southern California, the counties surrounding Los Angeles County are growing faster than the County. San Diego County is likely to have slower growth next year.

Silicon Valley's output has been down, but this situation should turn around soon. One big reason: Asia, a major market for Silicon Valley's high-tech exports, is recovering.

SP: In a knowledge-based economy, what is most important to cutting-edge companies is not infrastructure, but a sufficient supply of highly skilled workers. Since skilled workers are in high demand in a high-tech economy, they have more choice about their working conditions than workers in previous generations. In particular, they value a high quality of life. Long commutes detract from quality of life, and analysts who have studied this issue have observed the Rule of 37. This rule says that if knowledge workers' one-way commute to work exceeds 37 minutes, they will seek employment in a more satisfactory location. When there are two wage earners in one household e. g., husband and wife Ð who work in opposite locations from where they live, the calculation of the Rule of 37 entails a bit more arithmetic; however, the general concept remains the same.

GC: This does not mean that knowledge workers will stay within 37 minutes of urban cores. What has happened in the East Bay, for example, is that business centers have shifted from the urban core to suburban areas, e. g., from Oakland or San Francisco to Bishop Ranch in San Ramon. And as businesses move further out, workers often move further out. For example, a knowledge worker who once had a 39-minute commute from Walnut Creek to Oakland may end up having a 36-minute commute from eastern Contra Costa County to San Ramon. This could happen because when this worker decided to buy a home rather than rent, she found that the only location where she could afford one was in eastern Contra Costa County.

MS: City or county growth limitation initiatives, which limit new residential units, particularly multi-units,
militate toward longer commutes since those seeking housing will have to go further out to obtain it. In
Ventura County, several cities have passed SORE initiatives which "lock in" the general plan, preventing
city councils from rezoning. This not only smacks of NIMBYism (not in my back yard), but also shows a
no-growth tendency, two dangerous trends.

SP: Some farmers appear to be interested in farmland preservation measure only until they have their chance
to assure themselves a comfortable retirement by selling out to developers.

TM: Smart Growth needs strategies for encouraging growth in the city center.

SR: Smart Growth depends on people accepting high-density housing. However, there is much resistance to that,
with many people wanting to retain "their personal space."

MS: Growth limitations are going to impede economic
growth. There is already a housing crisis, and inventories are very low.

Some believe that advances in telecommunications and changes in the nature of work in the New
Economy mean that more people will be able to work at remote locations Ð for example, at home Ð and that
workers won't have to be physically in the same place. However, this hasn't happened yet, and most likely
won't. Workers need to be close for clusters to work. For the very concept of clusters implies being
close together.

SP: It is often pointed out that city center development has worked in Portland, Oregon and Salt Lake City,
Utah, bringing workers together in clusters housed in downtown locations. However, the greater size of
California coastal cites like Los Angeles must be taken into account in making a comparison, rather than just
assuming that what has worked in these two smaller cities would also work in a city like Los Angeles.

In the New Economy, the success of local economies will be highly dependent on the skills of the workers
who reside there. And knowledge workers have more choices than ever before about where they work. Rural

areas, for example, can expect to continue to experience a "brain drain" of potential knowledge workers
who move to more urbanized areas that offer them more of the qualities of life they are seeking.

About 60% the state's population growth will come from natural population growth (i. e., the number of
births minus the number of deaths) and about 30% from immigration.

Communities need to find ways to accommodate growth.

SR: Recently at Stanford University, a proposal to build more faculty housing in open space on campus
was defeated by those who wanted to keep the space open. Because of a shortage of housing on campus and
the high cost and relative unavailability of housing in the surrounding communities, Stanford is losing
prospective new faculty members as a result of this.

GC: People's personal choices play a big role in the economy. It may appear to some that the personal choices of the younger generation are self-centered and do not show any interest in the community at large. However, this is not true; the younger generation is interested in the community. My niece, for example, passed up a better-paying job in the corporate world to
teach in the inner-city L. A. schools.

The younger generation, however, is different. The Contra Costa Council, for example, is no longer made
up of traditional older males in traditional suits and shoes. Today, most of the members of the council are
consultants, like me, the president. But this younger generation is having an effect on the local economy
that is overlooked by many. There are now 750 high-tech companies with less than 15 employees in the
local economy. One of these companies grew from 6 to 30 employees in just six months. These young entrepreneurs
may not be interested in joining traditional groups like the Rotary club, but they are interested in
giving back to the community.

How can communities support and nurture these high-tech start-up companies? A very cost-effective way is
through incubators, which help to greatly raise the success rate of start-up firms. (For this analysis, a
"successful" business is defined as one that is still in business five years after starting.)

The success rate of
incubator-hatched firms is 80%-90% compared to 20%-40% of new startups overall.

Not all small high-tech companies are started by fledgling entrepreneurs. Many start as spin-offs of
established companies, and their founders are already experienced in their industry. For example, eighteen
scientists and managers have spun off new companies from Genetech.

Are new statistics needed to pick up the economic contributions of small companies which I define as those with less than 100 employees?

SP: Yes, the younger generation is different. Many of my friends, for example, have several jobs.

GR: What is the role of small business in our economy? AH: How can we get good data on small firms? David
Birch is often cited as a source of statistics on gazelles.

TM: Small, fast-moving high tech firms play a critical role in the New Economy.

SP: The high-tech firms along Route 128 (in Massachusetts) have not fared as well as those in
Silicon Valley because they were too tied to defense work. The more entrepreneurial Silicon Valley firms,
in contrast, have proven more adaptable to changing market conditions. Incidentally, St. Louis has turned out to be a favorite
location for Fortune 500 headquarters.

In California, high-tech firms from Northern California are likely to do an IPO. Not so in Southern
California where companies' founders prefer to retain control.

SR: It appears that the goal of some or many small high-tech companies is to be acquired. This trend is
working to the advantage of larger firms who want to get their technology, products, and markets without
having to do their own R& D.

GR: With small businesses having such an important role in the economy, it is critical that we can measure
and keep track of this activity. However, several speakers have expressed doubts about the availability and
quality of data on small businesses. Do others have an opinion on this?

MS: Yes, the economic activities of small business can be measured, albeit with a lag. Small businesses have to file various forms with the government such as Schedule C and forms for unemployment insurance Ð that enable us to do this.

TM: We have been taking an inventory of high-tech businesses in Oakland and have observed the pattern that small businesses often depend on larger businesses as the market for their products and/ or services. We have also been doing an analysis of the Sunnyvale high-tech economy. There also, many small high-tech firms depend on large companies as their market. However, in Sunnyvale, many depend on Lockheed, an Old Economy firm in a declining industry.

GC: We have also observed the pattern of small firms depending on one or more larger firms in the health-care industry in Oakland. There, the large firm is Kaiser Medical, and a cluster of software firms has developed that sell software and services preponderantly to it.

WH: Is this trend toward more small firms in the New Economy sustainable? Small retail firms, for example, are already constrained by labor shortages. Also, government regulators are excessively hard on small business.

GC: Yes, I agree that government regulators are excessively hard on small business. That has been my personal experience.

WH: We have been talking about growth of small businesses, but there also has been a growing trend toward concentration of economic power, and there seems to be a backlash against this.

TM: The dynamics have changed in the New Economy. Bigness, per se, is not bad. Rather what is important is the interaction and synergy between smaller firms and bigger firms. Japan, which has a more rigid economic structure than the U. S., has not allowed this change in dynamics to occur. Japan today is a third-rate economy in terms of performance (not size) because of lack of entrepreneurship and lack of encouragement for start-up companies.

In the New Economy, a 200 500 employee company is completely viable. The Fortune 500 list has been changing to reflect the realities of the New Economy. Microsoft, for example, has a higher market capitalization than three Old Economy companies combined: Boeing, GM, and Nucor. The latter is a tiny steel company based in North Carolina that has been receiving a lot of attention.

SP: The pace of work in the New Economy has accelerated greatly. We work faster even though our work-days are already longer. A backlash is likely to develop against this trend. Indeed, burnout among some workers is already occurring.

GR: What are the implications for California of these growing socio-economic gaps, e. g., income gaps? GC: It is not the wage gap, per se, that is the problem, but that some segments of the working age population lack involvement in the economy.

TM: Some people are falling through the cracks; they are not participating in the economy.

SP: When the U. S. has undergone major transitions in the past, e. g., from an agrarian economy to an industrial economy, gaps developed along economic and social lines. This is happening again today, as the U. S. economy is well into its transition to a post-industrial, service economy.

TM: There is already political fallout resulting from these growing gaps. The disenfranchised look to groups that promise to help them. Some are turning to extremist groups. And this is happening in the best of economic times. It should be noted that while most of these disenfranchised are probably better off economically than the majority of Third World residents, but they do not compare themselves to the Third World, rather to those around them in the U. S.

WH: And this is not happening just in the United States.

SR: We hear a lot about the Digital Divide, about the Connected and the Unconnected. But the issue goes deeper than having or not having Internet access. Those who remain technically illiterate are likely to be left behind economically and socially. And this situation could fester, leading to social unrest.

SP: There is more to it than "haves" and "have-nots." There are also "wants" and "want more." Attitude and

desire are critical determinants of success. Yet, an inappropriate mind set can extinguish them. The movie
"October Sky" illustrates this. A boy in a West Virginia mining town had an extraordinary gift for making
rockets. Yet, his peers and elders convinced him that this career would never work out for him and that he
was destined, like all from his town, to spend his life working in the mines. This phenomenon has also been
observed in Oregon lumber towns.

We have identified and discussed many of the challenges facing California during the next decade,
particularly growth issues and increasing economic and social gaps. We also discussed the changing role of
business in community and public affairs.

We have come to an approximate agreement on what defines the New Economy:

° It is global
° It is not just about high-tech.
° It is marked by changes in economic structure.
° Speed and a fast-paced work style are among its hallmarks.
° It has brought about significant changes in lifestyle, as well as the workplace.
° It is about networks and connectivity.
° It is intensely knowledge based.

How can cities prosper in the New Economy? The old economic development paradigm of chasing after
companies is not going to bring sustainable prosperity. Only about 500 companies relocate per year in the
entire county, and there are 17,000-18,000 economic development organizations trying to attract them.
These groups could make better use of taxpayers' money by working to retain existing industries and to
grow new ones. Unfortunately, many local governments have an economic development mindset from
the 1950s, decades behind the New Economy.

The relationship between the university and the business world will be even more important in the New
Economy than it has been in the past. Not only do new ideas flow from university research centers to the
corporate world, but also some new companies are spawned directly from universities.

With the California economy continuing to do so well, this would be a good time to invest in infrastructure.
However, these investments must be made smartly; we shouldn't just throw money at a problem. (TM was
alluding to SP's remarks about the billions the LA school district is spending on education.)

GR: Taking up on TM's comment about spending on education, considerable funds are being spent to do
little more than teach youngsters how to test. Thus, the tests they take aren't worthwhile, because rather
than testing content, they test students' skills at taking tests.

MS: I am sorry we didn't have time to discuss home-based businesses. This is the fastest growing part of the
economy. Many successful graduates from business incubators have started as home-based businesses.

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