

A. Post WWII Economy

1. WWII Effect on Economy

a) War and technological developments

- (i) The US Navy coined the acronym RADAR (Radio Detection and Ranging) in 1940, while the Germans and the British were duking it out.
- (ii) Initially, the Nazis used radar effectively to navigate and land bombers at night, while the British were flailing about with aerial navigation by star charts.
- (iii) However, Hitler and his Luftwaffe leaders underestimated the value of radar and its counterpart for aquatic deployment, SONAR (Sound Detection and Ranging.)
- (iv) The Brits gained significant tactical advantages in detecting German planes and submarines miles away. Advance warnings saved countless lives and allowed the underdog British to fend off overwhelming German attacks as well as go on the offensive.
- (v) Waves emanated far and wide from the massive boom in radar technology of the 1940's. You will actually find one in your microwave oven.
- (vi) Civil aviation and meteorology have obviously benefited from the development of radar. Dr. Robert Ballard famously used sonar to find many significant wrecks deep underwater, including RMS *Titanic*, the battleship *Bismarck*, the aircraft carrier *USS Yorktown*, and the wreck of John F. Kennedy's PT-109.
- (vii) The ENIAC computer, originally designed to calculate artillery firing tables for the US Army, was heralded as a "giant brain" with computational capabilities at least one thousand times faster than existing machines.
- (viii) Used to rapidly find key combinations for codebreaking, the ten Colossi were the first-ever "programmable" computers using optical tape readers.

- (ix) The British were understandably concerned about the new computers falling into the wrong hands, so Winston Churchill ordered them destroyed and blueprints burned.
- (x) However, historians worked with the original designers to painstakingly duplicate the specifications, and a functioning replica of Colossus number 9 went online in 2007.
- (xi) By mid-1942 Japan conquered and controlled all of Asia. This meant that the Rising Sun rose over nearly all of the world's supply of natural rubber.
- (xii) The United States went to work on the home front innovating new ways to produce quality synthetic rubber. GRS (Government Rubber Styrene) was born.
- (xiii) By the end of the war at least 50 American factories were cranking out a huge quantity of GRS — more than twice that of global natural rubber production before the war's beginning.
- (xiv) Today, most rubber materials used in manufacturing are direct descendants of GRS.
- (xv) The first working jet engine was already screaming in England a couple years before the war, but the British didn't invest much in the technology.
- (xvi) The Germans, on the other hand, built the Messerschmitt Me 262 which became the first jet-powered fighter aircraft — the fastest, most advanced war plane at the time.
- (xvii) The Me 262 was dominant in dogfights with pokey prop planes. Fortunately for the Allies, the Nazis weren't able to launch many jets until late in the war, when fuel shortages limited their ability to deploy them.
- (xviii) One significant innovation of jet engines was the axial-flow compressor. The axial-flow compressor was a big step forward in efficiency and power. Axial-flow compressors are still widely used today not only in jet engines, but also in ocean vessels, power stations, and many industrial applications.

- (xix) The first true multi-track audio recording system wasn't invented until years after the war, but the underlying technology came from captured Nazi electronics.
 - (xx) At the end of the war in Europe, US Army Signal Corp soldier Jack Mullin took personal possession of two German magnetophon devices, the most advanced magnetic tape recorders in the world at the time.
 - (xxi) Mullin was fascinated by the magnetophones. He spent the next several years as a civilian dissecting the tape decks and building his own version for use in sound recording for Hollywood movies.
 - (xxii) The amazing fidelity of sound reproduction caught the attention of MGM Studios, which led to Bing Crosby investing in further development of the recorders via electronics firm Apex. Crosby gave one of the first production model Apex decks to Les Paul, who used it to invent the modern multi-track recording process in the mid-1950's.
 - (xxiii) Important innovations in four- and eight-track music recording were employed for records by The Beatles and The Beach Boys in the 1960's.
- b) Television, the early computer industry, nuclear power, improvements in medicine
- (i) Television, had a powerful impact on social and economic patterns. Developed in the 1930s, it was not widely marketed until after the war.
 - (ii) In 1946 the country had fewer than 17,000 television sets. Three years later consumers were buying 250,000 sets a month, and by 1960 three-quarters of all families owned at least one set.
 - (iii) In the middle of the decade, the average family watched television four to five hours a day. Popular shows for children included *Howdy Doody Time* and *The Mickey Mouse Club*; older viewers preferred situation comedies like *I Love Lucy* and *Father Knows Best*.
 - (iv) Americans of all ages became exposed to increasingly sophisticated advertisements for products said to be necessary for the good life.

- (v) By the mid-1950s, over a dozen intrepid vendors endeavored to deliver inexpensive vacuum-tube computers. Limited in their capabilities, none were shipped in quantities of more than a hundred or so.
- (vi) Delivered in 1954, the IBM 650 Magnetic Drum Data Processing System targeted scientific, engineering and business applications. Like the large-scale computers, it supported magnetic-tape drives and also offered a scientific floating-point arithmetic option.
- (vii) A usable entry configuration leased for \$4,000 per month (\$32,000 inflation adjusted). Using vacuum tubes for control circuits, the 650 offered 2,000 words (of ten digits or five alphanumeric characters each) on a 10-cm diameter drum spinning at 12,500 revolutions per minute.
- (viii) A few years later at IBM's new laboratory in San Jose, California, engineers pioneered a computer based on the world's first moving-head magnetic disk drive.
- (ix) Delivered in 1956, the IBM 305 RAMAC (Random Access Method of Accounting and Control) targeted business applications such as inventory, billing, accounts receivable, and transaction processing.
- (x) The entry configuration leased for an attractive \$3,200 per month (\$25,000 inflation adjusted). The 305 used vacuum tubes and a plug board control panel and could execute up to 200 instructions from a small magnetic drum memory. The RAMAC stored up to 5,000,000 characters on a stack of fifty 61-cm diameter disks spinning at 1,200 revolutions per minute.
- (xi) By 1956, a computer census reported that three-quarter of the world's 1,100 computer installations were IBM 650s, making it by far the most popular computer at the time. Its numbers later peaked at 1,800 installations.
- (xii) Although the IBM 650 and 305 cost less than one fifth that of a large-scale computer, many small businesses still found them too expensive, with a monthly rental exceeding that of their typical assortment of punched-card machines.
- (xiii) The very nature of warfare between 1939 and 1945 forced the medical world to rush forward the pace of advance in medicine.

- (xiv) Advances in the treatment of infection had occurred pre-war but with the turmoil of war, research pioneers pushed forward to find solutions to very pressing problems.
- (xv) However, the very nature of war meant that treatments were needed in far greater quantities than during peace time. Therefore, probably for the first time since World War One, medical production was put onto a war footing so that the supplies that were required were produced.
- (xvi) While penicillin had been discovered pre-war by Sir Alexander Fleming, it took the war to force companies to develop a way of making the highly effective medicine on an industrial scale.
- (xvii) By the end of the war, such was the research into penicillin that several strains were developed.
- (xviii) The mass production of penicillin was always of great importance to the Allies yet it was also a difficult thing to achieve. The first mass production unit of deep-fermentation penicillin in Britain was established in 1945 in Castle Barnard.
- (xix) Despite the changes in warfare, one problem that barely changed was the time lapse between when a man was wounded and when he could be operated on by a surgeon.
- (xx) The average time lapse was acknowledged to be 14 hours. Prior to the use of penicillin, such a period of time allowed a wound to fester. With the use of a penicillin dressing, the chance of a wound getting infected was vastly reduced and survival chances greatly increased.
- (xxi) Along with increasing the chances of survival for those wounded, the other major development in World War Two was the treatment of those who had received severe wounds.
- (xxii) World War Two saw the growth of skin grafts and the blood transfusion service from a relatively primitive organization at the start of the war to a sophisticated well-oiled machine at the end, storing blood and distributing it to where it was needed.

- (xxiii) The war also saw the first full-scale investigation into mosquito bites.
- (xxiv) Though work on tetanus had started in World War One, it was developed and refined in the war years.
- (xxv) By immunizing soldiers, the risk of tetanus dramatically fell. Of the 17,000 men wounded at Dunkirk and who had been immunized before the campaign started, none got tetanus.
- (xxvi) All of the medical advances in World War Two went on to benefit society after the war had ended. Whether such developments would have occurred at the same pace in peace time will never be known.

2. Economic Recovery

a) Economic growth and prosperity from 1945 – 1969

- (i) For many generations and many decades, the American dream has promised an egalitarian society and material prosperity. For many, the notion of prosperity remained just a dream.
- (ii) But for millions of Americans in the 1950s, the American dream became a reality. Within their reach was the chance to have a house on their own land, a car, a dog, and 2.3 kids.
- (iii) Postwar affluence redefined the American dream. Gone was the poverty borne of the great depression, and the years of wartime sacrifice were over.
- (iv) Automobiles once again rolled off the assembly lines of the big three: Ford, General Motors, and Chrysler. The Interstate Highway Act authorized the construction of thousands of miles of high-speed roads that made living farther from work a possibility.
- (v) Families that had delayed having additional children for years no longer waited, and the nation enjoyed a postwar baby boom.
- (vi) Racial fears, affordable housing, and the desire to leave decaying cities were all factors that prompted many white Americans to flee to suburbia. And no individual promoted suburban growth more than William Levitt.

- (vii) Contracted by the federal government during the war to quickly build housing for military personnel, Levitt applied the techniques of mass production to construction.
- (viii) In 1947, he set out to erect the largest planned-living community in the United States on farmland he had purchased on Long Island, New York.
- (ix) Levitt identified 27 different steps to build a house. Therefore, 27 different teams of builders were hired to construct the homes.
- (x) Each house had two bedrooms, one bathroom, and no basement. The kitchen was situated near the back of the house so mothers could keep an eye on their children in the backyard. Within one year, Levitt was building 36 houses per day.
- (xi) His assembly-line approach made the houses extremely affordable. At first, the homes were available only to veterans. Eventually, though, Levittown was open to others as well.
- (xii) With the ability to own a detached home, thousands of Americans soon surpassed the standard of living enjoyed by their parents. Nevertheless, the movement was not without its critics. Architects called Levitt's designs and emphasis on conformity an abomination.
- (xiii) Despite such criticism, a generation of Americans loved the chance to avoid rent and the dirtiness of the city to live in their own homes on their own land. Soon, shopping centers and fast food restaurants added to the convenience of suburban life. Thousands and thousands migrated to suburbia.
- (xiv) America and the American dream would never be the same.

b) Business restructuring: conglomerates

- (i) After 1945 the major corporations in America grew even larger. There had been earlier waves of mergers in the 1890s and in the 1920s; but in the 1950s another wave occurred. The Conglomerate Boom.

- (ii) The Conglomerate Boom was a rapid growth in the number of conglomerates, or big corporations made up of many companies spanning multiple and often unrelated fields or industries.
- (iii) The major boom in conglomerate formation occurred in the period following World War II thanks in part to low interest rates, which helped finance leveraged buyouts.
- (iv) Conglomerates flourished in the 1960s thanks to the low interest rates and a market that fluctuated between bullish and bearish, providing good buyout opportunities for acquiring companies.
- (v) However, when interest rates began to rise again in the '70s, many of the biggest conglomerates were forced to spin off or sell many of the companies they'd acquired, particularly when they'd only done so to raise more loans and had failed to increase the efficiency of the companies they'd absorbed.
- (vi) That said, conglomerates can be advantageous, particularly if the conglomerate is well-diversified. For example, Berkshire Hathaway is a conglomerate holding company that has operated very successfully for years.

c) The Franchise (McDonald's)

- (i) While franchising grew steadily before World War II, truly explosive growth did not occur until after the war was over. Franchising emerged as a powerhouse economic force in the post-war 1950s, taking advantage of pent-up consumer demand, available franchisees, ideas from returning veterans, and capital provided by separation pay and the GI bill.
- (ii) The growth of franchising was further advanced through the 1946 enactment of the Federal Lanham (Trademark) Act that enabled property owners to safely enter into licenses with third parties – essential for modern franchising.
- (iii) Once potential entrepreneurs became confident in the licensing of intellectual property, more and more individuals began to offer and invest in franchise opportunities.

- (iv) In the 1950s and 1960s, the franchising boom achieved almost mystical stature. Franchisors of convenience goods and services grew throughout the United States, including the automotive aftermarket (Midas Muffler), hotels (Holiday Inn and Sheraton), ice cream and treats (Dairy Queen) convenience stores (7-Eleven), trades (Roto-Rooter), professional services (H&R Block), and laundry and dry cleaning (Martinizing Dry Cleaning).
- (v) Richard and Maurice McDonald began franchising in 1952, selling their first franchise to Neil Fox, a General Petroleum distributor whose franchise in Phoenix, Arizona opened in 1953.
- (vi) Their second franchise was partners Roger Williams and "Bud" Landon, who opened their Downy, California location also in 1953.
- (vii) It was not until 1954 that Ray Kroc licensed the rights to franchise McDonald's outside of certain markets in California and Arizona from the McDonald's brothers in exchange for ½ of 1% of gross sales, and formed the McDonald's Corporation.
- (viii) By 1958, in addition to the McDonald's brothers' restaurants and franchises, there was a total of 34 McDonald's restaurants. By the end of 1959, the chain had grown to 102 restaurants. Ray Kroc bought out the McDonald brothers in 1961.
- (ix) By 1965, when it went public, there were 1000 locations. The stock opened that day at 22½, closed the day at 30, and closed the first month at 50.
- (x) During the same ten-year period, Nate Sherman's Midas Muffler had grown to 400 locations, Kemmons Wilson's Holiday Inn grew to 1000 locations, and Jules Lederer's Budget Rent A Car opened their 500th franchise.
- (xi) This rapid growth of franchising did not come without problems. By the latter half of the 1960s, the bloom had left the rose: many franchisors were more focused on selling franchises than on operating sound franchise systems and providing services to their franchisees.

- (xii) Many franchisors during that period made misrepresentations in the promises they used to attract franchisees; some based their sales efforts on the use of celebrity names and endorsements; and many of those franchise systems failed. Some even sold franchises for concepts that didn't exist.

3. US Economic Slump

a) Impact of Vietnam War on the economy

- (i) The Vietnam War had several effects on the U.S. economy. The requirements of the war effort strained the nation's production capacities, leading to imbalances in the industrial sector.
- (ii) Factories that would have been producing consumer goods were being used to make items from the military, causing controversy over the government's handling of economic policy.
- (iii) In addition, the government's military spending caused several problems for the American economy. The funds were going overseas, which contributed to an imbalance in the balance of payments and a weak dollar, since no corresponding funds were returning to the country.
- (iv) In addition, military expenditures, combined with domestic social spending, created budget deficits which fueled inflation. Anti-war sentiments and dissatisfaction with government further eroded consumer confidence.
- (v) Interest rates rose, restricting the amount of capital available for businesses and consumers. Despite the success of many Kennedy and Johnson economic policies, the Vietnam War was an important factor in bringing down the American economy from the growth and affluence of the early 1960s to the economic crises of the 1970s.

b) Inflation and deficit spending in the 1970's and early 1980's

- (i) In 1967, the average price of a three-bedroom house was \$17,000. A brand-new Cadillac convertible went for \$6,700 and a new Volkswagen \$1,497; a Hershey chocolate bar sold for a nickel; a pound of sirloin for 89 cents. Two decades later, the prices of these products had quadrupled.

- (ii) The upsurge in inflation started when Lyndon Johnson decided to fight the Vietnam War without raising taxes enough to pay for it.
- (iii) By 1968, the war was costing the United States \$3 billion dollars a month, and the federal budget skyrocketed to \$179 billion. With hundreds of thousands of Americans in the military service and even more working in defense related industries, unemployment fell, wages rose, and government deficits increased.
- (iv) Inflation was further fueled by a series of crop failures and sharp rises in commodities, especially oil.
- (v) High inflation had many negative effects on the American economy. It wiped out many families' savings. It provoked labor turmoil, as workers went on strike for higher wages. It encouraged speculation in tangible assets--like art, precious metals, and real estate--rather than productive investment in new factories and technology.
- (vi) Above all, certain organized interest groups were able to keep up with inflation, while other less powerful groups, such as welfare recipients, saw the value of their benefits decline significantly.
- (vii) Inflation reduced the purchasing power of most Americans.
- (viii) For over a decade, real family wages remained flat. By the end of the 1970s, wages had climbed just \$36 over 1973 levels.
- (ix) Yet, inflation raised the prices of virtually all goods and services. Health care and housing, in particular, experienced price rises far above the inflation rate.
- (x) The consequences were a sharp increase in the number of Americans unable to afford health insurance, and a dramatic increase in the cost of housing, which resulted in an increase in homelessness.

c) Oil crisis of 1972 – 1973

- (i) Political unrest in the oil-rich Middle East contributed significantly to America's economic troubles. After suffering a humiliating defeat at the hands of Israel in the 1973 Yom Kippur War, Arab leaders unsheathed a new political weapon--oil.
- (ii) In order to pressure Israel out of territory conquered in the 1967 and 1973 wars, Arab nations cut oil production 25 percent and embargoed all oil exports to the United States.
- (iii) Leading the way was OPEC, founded by Iran, Saudi Arabia, and Venezuela in 1960 to fight a reduction in prices by oil companies.
- (iv) Because Arab nations had control over 60 percent of the oil reserves in the non-Communist world, they had the Western nations over a barrel.
- (v) Production cutbacks produced an immediate global shortage. The United States imported a third of its oil from Arab nations; Western Europe imported 72 percent from the Middle East; Japan, 82 percent.
- (vi) Gas prices rose, long lines formed at gas pumps, some factories shortened the work week, and some shopping centers restricted business hours.
- (vii) The oil crisis brought to an end an era of cheap energy. Americans had to learn to live with smaller cars and less heating and air conditioning. But the crisis did have a positive side effect.
- (viii) It increased public consciousness about the environment and stimulated awareness of the importance of conservation. For millions of Americans the lessons were painful to learn.

d) Carter's Energy Plan

- (i) As he grappled with international and economic problems, Carter attempted to build support for an energy program. Energy was, in fact, one of his biggest concerns.

- (ii) In April 1977 he introduced his solutions, employing dramatic terms in doing so. His proposals emphasized conservation and envisioned a smooth transition to an era of scarce and high-priced oil; they relied heavily on the taxing power to encourage people to shift from large automobiles to small ones, to cut back on the miles they drove, to insulate their homes and workplaces, and to shift from natural gas and oil to coal, nuclear power, and solar energy.
- (iii) Warning of a bleak future, praising conservation, appealing to patriotism, and criticizing the "special interests," the president, others in the administration, and the Democratic National Committee waged a massive campaign to build support.
- (iv) At first, although he had not developed his proposals in cooperation with congressional leaders, Carter seemed likely to succeed. Congress endorsed his proposal for creation of the Department of Energy and his selection of James Schlesinger to head it, and the House—with Speaker Thomas P. ("Tip") O'Neill of Massachusetts cooperating with the administration and providing effective leadership—quickly passed energy legislation that conformed with the administration's proposals.
- (v) In the Senate, however, the energy package ran into powerful opposition. A temporary surplus of oil, dislike for the tax features, and demands for deregulation of newly discovered natural gas contributed to the resistance.
- (vi) Republicans and southern Democrats, with Senator Russell Long of Louisiana, head of the Senate Finance Committee, playing an especially large role, combined to revise the package, incorporating the ideas of producers, who assured the people that freeing the industry would lead to solutions.
- (vii) Liberal Democrats and administration representatives battled against them. But lacking support from consumer groups and environmentalists, they lost on key issues, encouraging Carter to denounce the giant oil companies in October.

- (viii) When Senate and House conferees engaged in lengthy negotiations to iron out their differences, the administration embarked on a new, large-scale campaign on behalf of its proposals, with Carter postponing a foreign trip so as to concentrate on building support.
- (ix) But dominated by other concerns, the public was not moved by the campaign, and the administration felt compelled to make concessions.
- (x) In spite of Carter's avowed populism, his proposals did not have enough support from the people to overcome opposition from the interests.
- (xi) In fact, most people opposed his energy package. By emphasizing conservation rather than the development of new resources, the program seemed to call upon Americans to change their lifestyle, and most did not want to do that.
- (xii) Furthermore, most people did not believe the energy problem was as serious as the president suggested. With confidence in Carter declining, his ability to shape public opinion on this issue suffered, and he could not rally public support with his attacks on the big oil companies.
- (xiii) In addition, the program's heavy reliance on taxes ran head-on into a growing revolt against taxes. Thus, the people did not rise up and help Carter by putting pressure on Congress. Consequently, the legislation that finally passed in October 1978, although not unimportant, fell far short of his desires.

e) Nuclear Energy Debate

- (i) During the 1960s, concern about the overuse of nonrenewable resources, such as oil and gas, encouraged the development of nuclear power plants to generate electricity.
- (ii) Many people considered nuclear plants to be better than coal-burning plants because they caused less air pollution. Nuclear plants, however, discharged water used to cool the reactor into local waterways.

- (iii) This discharge raised water temperatures, killing fish and plant life. As time went on, objections to nuclear power plants began to develop.
- (iv) These objections were also fueled by a growing concern about the possibility of nuclear plant accidents. The fear was that in the event of an accident, radioactivity would be released into the air, causing serious damage or even death to all plant and animal life in the surrounding area.
- (v) The Nuclear Regulatory Commission (NRC), created in 1974, tried to address these fears as it oversaw the use of nuclear materials in civilian life. Its chief goal was to ensure that nuclear power plants and facilities were operated safely.
- (vi) With the Oil Crisis that hit during Carter's presidency, Nuclear power seemed to be a promising alternative energy source. Serious questions remained about its cost and safety, however.
- (vii) In March 1979, people's doubts appeared to be confirmed by an accident at the nuclear power plant at Three Mile Island, near Harrisburg, Pennsylvania.
- (viii) A partial meltdown of the reactor core occurred, releasing some radiation. About 140,000 people who lived near the plant fled their homes, terrified by the idea of a radioactive leak.
- (ix) Carter named a commission to investigate the accident. Their report identified operator errors that made the initial problem worse. Carter then proposed reorganizing the NRC and for companies to improve standards.
- (x) He noted "Very serious shortcomings in the way that both the government and the utility industry regulate and manage nuclear power."

f) Reaganomics

- (i) Reagan blamed the nation's economic ills on declining capital investment and a tax structure biased against work and productive investment.

- (ii) To stimulate the economy, he persuaded Congress to slash tax rates. In 1981, he pushed a bill through Congress cutting taxes 5 percent in 1981 and 10 percent in 1982 and 1983. In 1986, the administration pushed through another tax bill, which set tax rates of the wealthiest Americans to 28 percent, while closing a variety of tax loopholes.
- (iii) In August 1981, Reagan dealt a devastating blow to organized labor by firing 15,000 striking air-traffic controllers. Union leaders condemned the firings, but in an anti-union atmosphere, most Americans backed Reagan. His popularity ratings soared.
- (iv) To strengthen the nation's defenses, the Reagan administration doubled the defense budget--to more than \$330 billion by 1987. Reagan believed that a militarily strong America would not have been humiliated by Iran and would have discouraged Soviet adventurism.
- (v) Reagan expanded the Carter administration's efforts to decontrol and deregulate the economy. Congress deregulated the banking and natural gas industries and lifted ceilings on interest rates.
- (vi) The results of deregulation were mixed. Bank interest rates became more competitive, but smaller banks found it difficult to hold their own against larger institutions.
- (vii) Natural gas prices increased, as did production, easing some of the country's dependence on foreign fuel. Airfares on high-traffic routes between major cities dropped dramatically, but fares for short, low-traffic flights skyrocketed.
- (viii) Most critics agreed, however, that deregulation had restored some short-term competition to the marketplace. Yet in the long-term, competition also led to increased business failures and consolidation.

- (ix) Reagan left office while the economy was in the midst of its longest post-World War II expansion. The economy was growing faster, with less inflation, than at any time since the mid-1960s. Adjusted for inflation, disposable personal income per person rose 20 percent after 1980. Inflation fell from 13 percent in 1981 to less than 4 percent annually. Unemployment was down to approximately 5 percent.
- (x) Critics, however, charged that Reagan had only created the illusion of prosperity. They denounced the massive federal budget deficit, which increased \$1.5 trillion during the Reagan presidency--a deficit that was three times the debt accumulated by all 39 of Reagan's presidential predecessors.
- (xi) His critics decried the growing income gap between rich and poor. They also criticized the expensive consequences of reduced government regulation, namely, cleaning up federal nuclear weapons facilities, and especially, bailing out the nation's savings and loans industry.

4. The "Information Age"

a.) Technological revolution of 1980's and 1990's

- (i) The videocassette recorder (VCR) allowed Americans to record television shows and watch them according to their own schedule and view feature films in the privacy of their own homes.
- (ii) Perhaps the product that introduced the greatest change in American lifestyles of the 1980s was the personal computer. Introduced by apple in 1977, the personal computer allowed management of personal finances, quick word-processing, and desktop publishing from the home.
- (iii) Businesses could manage payroll, mailing lists, and inventories from one small machine. Gone were the ledgers of the past. The Silicon Valley of California, which was the home to many of the firms that produced the processors that made these computers run, became the symbolic heart of the American technological economy.

- (iv) "Greed Is Good," declared the lead character of the movie *Wall Street*. With the growing economy, many middle-class Americans rushed to invest in the bullish stock market and to flaunt their newly acquired wealth.
 - (v) Young urban professionals, or yuppies, replaced the socially conscious hippie of the previous generation of youth. Yuppies sought executive track jobs in large corporations and spent their money on upscale consumer products like ray-ban sunglasses, polo apparel, and Mercedes and BMW automobiles.
- b) Computers, Internet, and "The New Economy"
- (i) Personal computers had become widespread by the end of the 1980s. Also available was the ability to connect these computers over local or even national networks.
 - (ii) Through a device called a modem, individual users could link their computer to a wealth of information using conventional phone lines. What lay beyond the individual computer was a vast domain of information known as cyberspace.
 - (iii) The internet was developed during the 1970s by the Department of Defense. In the case of an attack, military advisers suggested the advantage of being able to operate one computer from another terminal.
 - (iv) In the early days, the Internet was used mainly by scientists to communicate with other scientists. The Internet remained under government control until 1984.
 - (v) One early problem faced by Internet users was speed. Phone lines could only transmit information at a limited rate. The development of fiber-optic cables allowed for billions of bits of information to be received every minute.
 - (vi) Companies like intel developed faster microprocessors, so personal computers could process the incoming signals at a more rapid rate.
 - (vii) In the early 1990s, the world wide web was developed, in large part, for commercial purposes. Corporations created home pages where they could place text and graphics to sell products.

- (viii) Soon airline tickets, hotel reservations, books, and even cars and homes could be purchased online. Colleges and universities posted research data on the Internet, so students could find valuable information without leaving their dormitories.
 - (ix) Companies soon discovered that work could be done at home and submitted online, so a whole new class of telecommuters began to earn a living from home offices unshaven and wearing pajamas.
- c) Impact on society, education, and government
- (i) New forms of communication were introduced. Electronic mail, or email, was a convenient way to send a message to associates or friends. Messages could be sent and received at the convenience of the individual.
 - (ii) A letter that took several days to arrive could be read in minutes. Internet service providers like America Online and CompuServe set up electronic chat rooms. These were open areas of cyberspace where interested parties could join in a conversation with perfect strangers.
 - (iii) Advocates of the internet cited its many advantages. The commercial possibilities were limitless. Convenience was greatly improved. Chat rooms and email allowed individuals to converse who may never have had the opportunity in the past.
 - (iv) Educational opportunities were greatly enhanced because of the wealth of knowledge now placed at the fingertips of any wired individual. "surfing the 'net'" became a pastime in and of itself.
 - (v) Critics charged that the internet created a technological divide that increased the gap between the haves and have-nots. Those who could not afford a computer or a monthly access fee were denied these possibilities.
 - (vi) Many decried the impersonal nature of electronic communication compared to a telephone call or a handwritten letter. Hate groups were using the internet to expand their bases and recruit new members.

- (vii) The unregulated nature of the internet allowed inappropriate content to be broadcast to millions of homes. Protecting children from these influences would prove to be difficult.
- (viii) Regardless of its drawbacks, by the end of the 1990s, the world was fast becoming wired.