Forecasts: 2025 and Beyond

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November 2024

The US/World environment has become more volatile, uncertain, complex, and ambiguous (VUCA) as government and business organizations use the term. This VUCA environment is expected to continue for the foreseeable future and potentially worsen with climate change, economic uncertainty, social and political polarization, the pace of technological change, and human migrations, conflicts and terrorism among other factors. Most of the information that follows comes from organizations such as the Bureau of Labor Statistics, MIT, World Economic Forum, Pew Research, Brookings, IPPC, and other various governmental and professional sources. Many of these forecasts are expected within the next few years with some stretching out a decade or two. Not every forecast data is good or bad and some reflect new and encouraging opportunities.

Technology:

- Digitization: Transformation of governments, organizations, products, services, crime, war, education, entertainment, sports, the economy, and so on to digital wherever possible, leading to a potential loss of security, increasing instability, and continual need to upgrade skills. Digital devices will become smaller, lighter, faster, and more interconnected by the billions. Smart phones already provide language translation, health monitoring, educational platforms, and act as financial managers, confidants, counselors, coaches, and teachers as processing speeds begin to exceed the processing speed of the human brain; communication bandwidth becomes essentially unlimited; and applications become artificial intelligence, virtual reality, and augmented reality enabled. Apple and Samsung have announced that their 2024/2025 smartphones will be AI enabled and is available already on some models. Conversational capabilities will be added and enhanced over the next few months.
    - Implications? Upsides? Downsides?

- Robotics: Robots will become caregivers for old and young alike as well as the disabled, and will be increasingly used in construction, entertainment, crime fighting, hazmat cleanup, hospitality, manufacturing, war, and other fields. Some hotels currently have robots available to deliver towels, shampoo, and such to hotel guest rooms.
    - Implications? Upsides? Downsides?

- Smart devices: Today, smart devices respond to voice command to control HVAC, lighting, TV, music, household appliances, door locks, window coverings, fans, water leak sensors, thermostats, and so on. Tomorrow, they will engage in conversation, offer advice, schedule travel arrangements, serve as personal coaches and psychologists among many other services.
    - Implications? Upsides? Downsides?

- Transportation: The transition from gasoline powered vehicles to electric power is underway. Many transportation and manufacturing activities will be partially automated or fully automated with a potential loss of millions of jobs. Considering truck driving alone with around 5 million drivers. The loss of jobs in trucking and other fields could be in millions nation-wide due to increasing automation and mechanization. Jobs that are high skilled and low routine will be safer for now. Low skilled and high routine jobs will be more vulnerable. The potential is for reduced traffic accidents and transportation options for those who cannot or do not want to drive. Robo taxis are a near term future.
    - Implications? Upsides? Downsides?

- 3D or additive printing: This will bring about transformational change from printing component parts to houses to human organs, bones, teeth, artwork, and all sorts of household and commercial items. Currently, 3D printing is available for kids of all ages to create objects of their imagination from artwork, games, toys, and whatever else can be thought up.
    - Implications? Upsides? Downsides?

- Energy: Energy consumption in 2021 was about 97 quadrillion BTUs with about 12% renewables, 8% nuclear, and 80% fossil fuels according to the U.S. Energy Information Administration. Energy needs are expected to double over the next 10 years and at the same time, there is a critical need to reduce greenhouse gas emissions if we are to meet the 1.5 C degree warming goal. Renewable energy sources are expected to increase as a percentage of energy requirements while fossil fuels peak according to McKinstry (2022). The U.S. electrical grid will need significant upgrades to support increased energy demands as well as for relatively discontinuous renewables as the sun doesn't shine and the wind doesn't blow all the time. Solar power is already the lowest cost power in many areas of the world and costs continue to drop. Think Moore's law for solar, wherein power performance increases while costs decrease every few years.
    - Implications? Upsides? Downsides?

Environment:

- Climate change: Leading to a rapid extinction of species, loss of fresh water and arable land, warming oceans and land, loss of forest land, ocean acidification, raising sea levels, and human and other species migrations. Bugs and disease will move north and uphill; expect dozens of villages, towns, and even large cities to retreat from rising seas. Snow pack will be reduced resulting in shorter snow seasons and reduced snowpack meaning less fresh water available and shorter winter sports seasons. We have less than 15-20 years to address this problem; If not, we can expect some countries, regions, or cities to gradually collapse over time as coastal areas flood and as it becomes too hot to work and play outside—think agriculture, construction, sports, flying, walking, or even driving. July 2023 was the warmest July on record. Year, 2024 is shaping up to be the hottest on record that we have lived through.

- Implications? Upsides? Downsides?

- Destruction: Increasing deforestation; pollution (such as plastic, greenhouse gases, and other contaminants); and over harvesting of fisheries and sea foods. Forever chemicals along with microplastics are now found throughout the ecosystem and in the bodies of animals and humans alike, including human female milk.
    - Implications? Upsides? Downsides?

- Transportation: Increasing gridlock in cities with continued lost time in commuting. Increasing need and demand for transportation such as bus, light-rail, and autonomous vehicles. Many rural roads are already crumbling, built with an expected 30-year life span and at the 70+ year mark today. Cost of repair / replacement in the billions of dollars. Some to many rural, fishing, and logging roads will close given the economics of keeping them open. Many to most bridges are at risk for failure as many were constructed decades ago. Trains are yet another problem in waiting. Some airports are close to or already at capacity.
    - Implications? Upsides? Downsides?

Social / Demographics:

- Racial Mix: A continued decline in the percentage of Caucasians with an increase in percentages of minority groups including Asians, African-Americans, and Hispanics. Currently African-Americans make up about 13.6% of the U.S. population, Hispanics make up about 19%, Asian-Americans make up about 5.6%, and there is a small percentage for other populations. The White population is about 62% The U.S. population is expected to increase from about 340 million people today to around 400 million by 2040-2050, with about 50% living in 8 states and 70% living in 16 states with most of them living in cities. Caucasians will make up less than 50% of the U.S. population within 25 years. Racial forecast for 2050 is about 47.8% White, 25.66% Hispanic, 13.3% Black, 8.2% Asian, and about 4.1% multi-racial.
    - Implications? Upsides? Downsides?

- Geography: Currently the U.S. population is about 80% urban/suburban and 20% rural and over the next 10 to 20 years, there will be continued migration from rural to urban areas. Far more economic and educational opportunities exist in urban areas than in rural areas.
    - Implications? Upsides? Downsides?

- An Aging Population: Population aging (about 10,000 people a day reach age 65 in the U.S. and are expected to do so until the early 2030s). This increase in the percentage of elderly population will require more health care, financial care, adequate housing, and simply care in daily living activities. Will these resources be available at any price? Note: all of this is subject to change as climate change accelerates.
    - Implications? Upsides? Downsides?

- Majority-minority: Wikipedia (2019) noted that six states are currently majority-minority: Hawaii, California, Texas, New Mexico, Nevada, and Maryland. An additional 11 states have less than 60% non-Hispanic White population: Alaska, Arizona, Louisiana, Mississippi, Florida, Georgia, Illinois, New York, New Jersey, Delaware, and Virginia. Given that minority births have exceeded White births since 2011, the forecast that within 25 years, the non-Hispanic White population becoming minority seems correct.
    - Implications? Upsides? Downsides?

- Birthrate: The U.S. birthrate has been trending down and as of 2023 was about 1.6 children per childbearing woman. This is below the replacement rate of 2.1 children per woman of childbearing age. UK birthrate is down to about 1.44, South Korea and Italy are slightly less.
    - Implications? Upsides? Downsides?

- Living Arrangements: A recent Census Bureau report noted that 27.6% of all American households were one-person households in 2020 — more than triple the 1940 figure of 7.7%. About 50% of U.S. adults are single.
    - Implications? Upsides? Downsides?

- Divorce Rate: the divorce rate for Americans aged 50 or older has roughly doubled between the 1990s and 2015.
    - Implications? Upsides? Downsides?

- War: Physical wars will be increasingly fought with robots as will policing. Cyber and Information warfare will increase and will be internationally as well as domestically driven—think in terms of domestic civil wars between various groups of people; between political parties; between progressive and conservative groups; and possibly between cities and states as conflicts escalate, resources diminish, and personal identities become at risk.
    - Implications? Upsides? Downsides?

- Health: The U.S. now ranks 33/34 of the OECD nations in terms of obesity. Yet, by 2030, about half of the U.S. will be obese. Time to consider obesity and its relationship to health problems, not to mention the potential inability to work at many jobs. Also, time to consider to cost of obesity and what we can do about it. About 1,000 people a day die from smoking related factors and about 40,000 per year die from gun violence with about half being suicides according to PEW (2022). Putting 20,000-gun deaths in perspective, it is about 7- 911's each year or about 1-911 every other month and year after year.
    - Implications? Upsides? Downsides?

- Education: According to the U.S. Census (2019), for those over 25, about 4.5% have a doctorate, 21% have a masters, about 3.2% have a professional degree, and about 48%

have a bachelor's degree. The percentage of degrees has increased over time. As of 2017, a person with an advanced degree earned about 3.7 times more than a high school dropout. The number of people with a master's or doctoral degrees doubled since 2000. The percentage of Democrats with a college degree has almost doubled from 22% in 1996 to 41% in 2019.
    - Implications? Upsides? Downsides?

- Religion: While the U.S. is one of the most religious western countries, the U.S. is gradually becoming more secular. Pew (2023) reports 63% of U.S. adults identify as Christian, but this is down from 78% in 2007 or in just 16 years. Over this same period, the percentage of nones has increased from 16% to 29%. If this trend continues, fewer than 50% will identify as Christian by the mid-2030s.
    - Implications? Upsides? Downsides?

Economic:

- Inequality: Increasing inequality in terms of wealth, income, charitable giving, education, civic involvement, housing, health / lifespan, and opportunity. The top 85 people in the world have as much money as the bottom 3.5 billion people. The top 5% in the U.S. make up about 35% of the consumption of goods and services.
    - Implications? Upsides? Downsides?

- Debt: U.S. student loan debt (about $1.75 trillion) exceeds credit card debt (about $1 trillion). Only mortgage debt is higher than student loan debt and as of 2022, mortgage debt was over $11 trillion dollars with an average mortgage balance of over $250,000. U.S. debt is about $35 trillion dollars, the deficit is about $1.5 trillion dollars, and the GDP is about $28 trillion dollars. Interest payment on the debt is between $900 billion to $1 trillion dollars per year. By comparison, annual interest payments on the national debt are now more than the U.S. spends on Defense.
    - Implications? Upsides? Downsides?

- Health Care: According to the Peter G. Peterson Foundation (2023), U.S. healthcare spending is about $4.3 trillion, which averages out to about $12,900 per person per year. By comparison, the average cost of healthcare per person in other wealthy countries is only about half as much. Healthcare costs continue to increase each year.
    - Implications? Upsides? Downsides?

- Homelessness: Approximately 1.5 million people were homeless in 2014. Since 2016, homelessness has fluctuated. As of 2020, the homeless population has increased in 27 states. It is doubled in some cities. Most homeless people live in California, New York, Florida, and Washington in 2022. HUD (2022) reported that approximately 600,000 people are homeless, and homelessness has increased during 2023-2024. The cost for each homeless person varies between $50,000 and $100,000 per year for emergency health care, food, shelters, sweeps, cleanup, and such.
    - Implications? Upsides? Downsides?

- Cost of Living: An increasing cost of living, especially in major high-technology cities; many of which are driving middle income people out and increasing a homeless problem. About 2 in 5 U.S. adults could not come up with $400-$500 for an emergency. One in three American households are rated at economically fragile.
    - Implications? Upsides? Downsides?

- Social Security: U.S. social security funds is expected to diminish by around 2030-2034 without some policy changes. Potential changes include gradually raising retirement age to 70 or so, increasing taxes, increasing social security withholding rates and raising the maximum income level, and reducing benefits among others.
    - Implications? Upsides? Downsides?

- California's GDP ($3.6 trillion in 2022) has surpassed the GDP of the UK and if it were a separate country, would be fifth on the GDP list, just below the U.S., China, Japan, and Germany. As of 2023, the California GDP is almost equal to Germany. Seven states generate almost 50% of the U.S. GDP: CA, TX, IL, OH, NY, PA, and FL. GDP per seat in Democratic districts increased from about $35 billion to $48 billion since 2008, whereas Republican districts declined from about $33 billion to $32 billion. U.S. GDP is over $28 trillion as of 2023.
    - Implications? Upsides? Downsides?

Political:

- U.S. Senate Seats: By 2040, about 70% of the U.S. population (16 states) will elect 32 U.S. Senators, while about 30% of the U.S. population (34 states) will elect 68 U.S. Senators. By 2040, about 50% of the U.S. population (about 8 states) will elect 16 U.S. Senators while the other 50% of the U.S. population (about 42 states) will elect 84 U.S. Senators. How long can minority rule last?
    - Implications? Upsides? Downsides?

- Polarization. Increasing social and political polarization and fragmentation as people sort themselves out by race, attitudes toward race, religion, education, and geography: As of 2020, there are few to no major cities that vote Republican. That is, most to all major U.S. cities vote for Democrats. Social entropy or social disorder is increasing.
    - Implications? Upsides? Downsides?

- Potential Realignment: Potential realignment of Republican and Democratic parties; potential realignment of cities or states based on population size and growth, economics, culture, and political power. Fun fact: cities are not mentioned in the U.S. Constitution.
    - Implications? Upsides? Downsides?

Some general questions.

- Will our future will be more urban, mobile, educated, secular, tolerant, healthy, and wealthy?

- Will our future become more less mobile, less educated, more religious, less tolerant, less heathy, and more unequal?

- Will the U.S. stagnate and fragment into multiple semi-autonomous regions? Eleven economic regions containing two or more metropolitan areas already exist. The Cascadia Innovation Corridor, for example includes Vancouver, CA and south to Seattle and Portland GDP

- Will the U.S. remain a democracy?

- Will the U.S. remain one country?

- Is the U.S. Constitution obsolete? Does it need revision?

- Will climate change force a new world order?

Sources:

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