

LCA's Highlights of

# Emerging Trends

APRIL  
2016



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Excerpts & Highlights from  
*Global Trends 2030* P.7

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## NOTE TO READER

Strategy does not operate in a vacuum. The world around us is constantly changing and evolving. In only one decade, the political, demographic, economic and technological landscape can shift dramatically—with far reaching impacts for any industry. In order to craft smart and forward looking strategies, it is important to stay apprised of current and emerging trends and forces, and to consider their implications.

The aim of this document is to provide you with insight into a wide range of trends and forces at a global and national level (beginning on pages 1 and 10 respectively), as well as within the industry specific trends (available upon request). It is intentionally without narration, as we hope that you take this opportunity to contemplate the future free from an author's bias or personal interpretation. Data is offered, and you are free to draw your own conclusions about how the future may unfold, and how your industry may evolve. For this reason, however, the document can be a little overwhelming if read like a book. Instead, we encourage you to read the sections which are of interest to you or catch your eye, and to skim or skip those sections which do not.

We hope that you learn something new and take some time to think openly about the future.

# GLOBAL TRENDS

## GLOBAL ECONOMY

### ECONOMIC GROWTH

- The IMF estimated global GDP growth at 3.1% in 2015, with projected growth of 3.4% in 2016 and 3.6% in 2017. This marks a slight dampening of economic expectations from previous years.
- According to the IMF in January 2016, risks to global outlook remain tilted towards the downside as a result of a generalized slowdown in emerging market economies, China's rebalancing, lower commodity prices, and the gradual exit from extraordinarily accommodative monetary conditions in the US.
- While it took Britain 155 years to double GDP per capita, with about 9 million people in 1870, it took the US and Germany between 30 and 60 years with a few tens of millions of people in the 1900's. Today, India and China are doing this with 100 times the people, in 1/10th the time as Britain.
- By 2030 majorities in most countries will be middle-class, not poor, for the first time in human history.
- By 2030 global spending on infrastructure is expected to be approximately \$41 trillion, about half of it being spent in advanced economic regions.

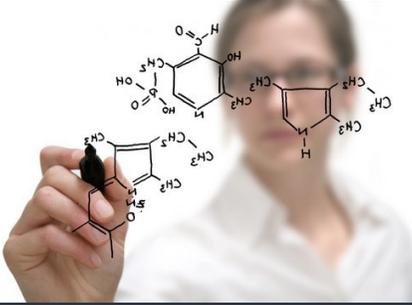
### NEW & SHIFTING MARKETS

- Over the next 15 years, another 1.8 billion people will enter the global consuming class and worldwide consumption of manufactured goods will double to \$64 trillion.
- The "consuming class", those who make more than \$3,600 annually and contribute to the consumption of goods and services, is expected to grow by 70% by 2025.
- By 2020 analysts estimate that 2/3 of the growth in the global middle class will come from just China and India. Despite their still being 5-10 times poorer per capita than "advanced" countries like the US, UK, and Japan—India and China's new middle class consumers are expected to contribute approximately 1/4 of total consumption growth through 2020.
- The GDP of "emerging economies", including the arguably already "emerged" economies of Brazil, Russia, India and China (BRIC) accounted for 20% of the world's GDP in 2000, 34% in 2010, and an estimated 39% in 2015.
- Consumers in developing economies will create new market opportunities and will require very different products to meet their needs, with different features and price points.



### RESEARCH & DEVELOPMENT

- Five major technology platforms may soon make significant breakthroughs, creating new industries and having long-term impacts for productivity, the workplace, and society at large. These technologies include nanotech, biotech/genomics, artificial intelligence, robotics, and ubiquitous connectivity.
- R&D spending in all major economies more than doubled from 1991 to 2011, rising from \$740 billion to \$1.5 trillion.
- In terms of percentage of revenue spent on R&D, the US led the world in 2014 with approximately 5.2% of revenue across all industries, followed by Japan with approximately 3.8%, Europe 3.2%, the rest of the world with 2.4%, and lastly China with approximately 1.3%.
- Analysts project that Chinese R&D spending could surpass the US by the early 2020's.



## EMPLOYMENT, AUTOMATION & MANUFACTURING

- The growing divide between the global supply and demand for skilled labor is expected to grow. The McKinsey Global Institute projects a potential shortage of 38-40 million high-skilled workers (or 13% of demand); and a surplus of 90-95 million low-skilled workers (or 10% of demand) by 2020.
- Persistent structural unemployment is evident in much of the world, with more than two thirds of people in most countries calling the lack of employment opportunities “a very big problem”, according to a 2013 Pew Research report.
- The cost of automation relative to labor has fallen by 40-50% in advanced economies since 1990.
- The share of manufacturing activities and employment as it relates to Gross Domestic Product (GDP) continues to drop globally, and is now at 17%, as compared to 27% in 1970.
- Manufacturing employment continues to shift from developed countries to developing and transitioning countries. By 2010, 383 million jobs had been created in developing countries, while in 1970 manufacturing employment in these countries accounted for only 133 million jobs.
- At the same time, many companies are reassessing the balance between efficiency gains from globally optimized value chains and the resilience of less fragmented and dispersed operations in light of changing wage profiles, political instability, and extreme weather impacts on countries around the globe.
- Common processes such as outsourcing and offshoring are being counterbalanced by nearshoring or even reshoring, as input costs are changing and capabilities are being developed.
- Entirely new manufacturing processes such as 3D printing have yet to significantly impact the manufacturing landscape, but these impacts could be far-reaching— both in terms of developing instantaneous prototypes, and by allowing consumers to design and print their own products.

*“...the idea of the future being different from the present is so repugnant to our conventional modes of thought and behavior that we, most of us, offer a great resistance to acting on it in practice.”*

~John Maynard Keynes, 1937



## ECONOMIC MIGRATION

- More than 1.3 million people migrate to urban areas every week.
- The UN estimates that 2 million people per year will move from poorer to developed nations over the next 40 years, with more than 50% destined for the U.S.
- The U.S. is the world's preferred destination for skilled and educated migrants. Between 1990 and 2013, the U.S. gained approximately 1 million migrants per year, and is projected to be the destination of more than half of the world's migrants.
- Increasingly, leaders in developed countries are likely to consider migration policy as part of an economic growth strategy, particularly as competition grows for highly skilled employees.
- The World Bank estimates that a 3% increase in the stock of migrants by 2025 would lead to a .6% increase in global income, a gain of \$368 billion, more than the gains from removing all remaining barriers to free trade.
- The extent of the flows—potentially of tens of millions of people from the poorest developing countries to middle-income countries as well as to rich developed countries—creates the potential for huge human rights abuses and exploitation.

## GLOBAL DEMOGRAPHICS

### POPULATION

- The global population consist of approximately 7.1 billion people and is growing at a rate of 1.1% annually; 26% of the world is under the age of 14, 17% between 15-24, 41% between 25-54, and 16% 55 or older.
- Between now and the year 2050, the distribution of the world's population will dramatically shift towards Africa, with the continent holding 23% of the global population, an increase from 13% today. Asia and Europe will both lose 5% relative to today, becoming the home to 55.7% and 7.2% of the planet respectively. North America, South America, and Oceania are expected to remain approximately the same at 8%, 5.6%, and .5% of global population respectively.
- The five most spoken languages of the world are: 1) Mandarin Chinese, 2) English, 3) Spanish, 4) Hindi, and 5) Arabic.

### URBANIZATION

- Every year 65 million people are added to the world's urban population – the equivalent of adding seven cities the size of Chicago, or five the size of London, every year.
- Owing to rapid urbanization in the developing world, the volume of urban construction for housing, office space, and transport services over the next 40 years could roughly equal the entire volume of such construction to date in world history, creating enormous opportunities for both skilled and unskilled workers.
- 51% of the world's population currently lives in urban environments, a trend that is projected to grow at an annual rate of 1.85%, or 65% of the world's population by 2025.
- GDP growth is highly concentrated in just a few hundred cities. The top 600 cities by GDP growth constitute just 20% of the world's population today, but more than 50% of global GDP; by 2025 these cities are expected to constitute more than 65% of global GDP.
- Of the top 600 cities by GDP growth, 440 are within developing economies. These cities are projected to generate 47% of global GDP by 2025 and host 20 mega cities in their ranks (cities with populations of 10 million or more), while the developed economy cities will constitute only 17%.



## PEACE & CONFLICT

- According to the Institute of Economics & Peace, in 2015, 78 countries have become less peaceful while 81 have become more peaceful since 2014. Countries seeing the most improvement in their scores were (in order) Guinea-Bissau, Cote D'Ivoire, Egypt, Tajikistan, and Benin. Countries seeing the most deterioration were (in order) Libya, Ukraine, Niger, Djibouti, South Sudan. (Note: this index records changes in scores – countries such as Syria in prolonged conflict did not necessarily register such change).
- The greatest regional increases in weapons imports in the world have been Russia and Eurasia with an increase of 136% from 2008-2014, South Asia with an increase of 92%, and South America with a 63%.
- According to the Institute for Economics and Peace, the economic impact of containing and dealing with conflict in 2015 was significant, amounting to \$14.3 trillion, or 13.4% of global GDP.
- Societal tensions and armed conflicts continue to increase across the globe, particularly in North Africa and the Middle East where the rise of ISIS in Syria and Iraq has dramatically changed the landscape of armed conflict in the region. The redrawing of state boundaries in the region is a distinct possibility over the next several years.
- Tension and conflict between Ukraine and Russia persist. The geopolitical landscape has been markedly affected by this conflict, resulting in a far more combative and precarious relationship between Western Nations and Russia.
- Today more than 80 countries have populations with a median age of 25 years or less. As a group, these countries have an over-sized impact on world affairs—since the 1970s, roughly 80% of all armed civil and ethnic conflicts (with 25 or more battle-related deaths per year) have originated in countries with youthful populations. By 2030, this arc will have contracted and the number of countries with youthful populations is projected to fall to about 50. The largest persistent cluster of youthful states is projected to be located along the equatorial belt of Sub-Saharan Africa. A second, more diffuse group of youthful countries is projected to persist in the Middle East.
- UAVs may routinely monitor intrastate and interstate conflicts, enforce no-fly zones, and survey national borders.



### PERCEIVED THREATS

A Pew Research survey polling many thousands worldwide asked people from various world regions “which of these poses the greatest threat to the world?” The consensus of which issue poses the top threat within each region is as follows:

- Middle East – religious and ethnic hatred (first choice of 34% of respondents)
- Europe – inequality (first choice of 32% of respondents)
- Asia – pollution and environment (first choice of 22% of respondents)
- Latin America – nuclear weapons (first choice of 26% of respondents)
- Africa – AIDS and other diseases (first choice of 29% of respondents)
- US – inequality (first choice of 27% of respondents)





## POLITICS

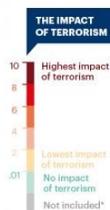
- Public dissatisfaction with political leadership remains at, or near, record highs across many EU member countries, the UK and the U.S.
- Budget shortfalls in OECD countries will make alternative models such as public-private partnerships increasingly common.
- National power index (based on GDP, population size, military spending, technology, health, education, and governance) indicates that by 2030 developing states will surpass developed states unless there is a radical departure from ongoing trends and forecasts.
- Many countries are primed to move closer democracy by 2030, but the process is often destabilizing.
- Regional trends will pull countries in East Asia in two directions: toward China economically, and toward the US and one another for security.

## REFUGEE MIGRATION

- According to the UN Refugee Agency, the war in Syria has created 4.72 million registered Syrian refugees seeking asylum as of February 2016.
- According to the Institute of Economics & Peace, 2008 through 2015 saw the highest number of refugee and internally displaced peoples worldwide since the end of WWII in 1945.
- The BBC has reported that Europe saw 1.29 million asylum claims during 2015 as a result of conflict in the Middle East. Many thousands will also have entered illegally, primarily by boat, although reliable estimates are not available.

## TERRORISM

- Deaths caused by terrorism increased by 61% in 2013 resulting in 17,958 casualties worldwide. Of those killed, 82% occurred in only five countries: Iraq, Afghanistan, Nigeria, and Syria.
- Around 5% of all the 107,000 terrorist fatalities since 2000 have occurred in OECD countries (2013 figures).
- Homicide claims 40 times more people globally than terrorism, with 437,000 lives lost due to homicide in 2012, compared to 11,000 terrorist deaths in 2012.
- Approximately 50% of terrorist attacks claim no lives.
- 60% of all attacks involve the use of explosives, 30% use firearms and 10% used other tactics including incendiary devices, melee attacks and sabotage of equipment.
- The number of countries experiencing over 50 deaths in one year hit an all-time high in 2013 at 24, five greater than the previous high of 19 countries in 2008.
- Religion as a driving ideology for terrorism has dramatically increased since 2000. Prior to 2000 nationalist separatist agendas were the biggest drivers of terrorist organizations. Political and national separatist movements are still significant but have seen little change over the past 14 years to 2014.
- Experts expect global terrorists to become more transnational, and to target infra-structure such as communications, transportation, energy, and computer networks.



**GLOBAL  
TERRORISM  
INDEX 2015**

CAPTURING THE IMPACT OF TERRORISM

INSTITUTE FOR  
ECONOMICS  
& PEACE

## NATURAL RESOURCES

- The World Bank estimates that demand for food will rise by 50% by 2030, as a result of growing world population, rising affluence, and the shift to Western dietary preferences by a larger middle class.
- A major international study finds that annual global water requirements will reach 6,900 billion cubic meters (BCM) in 2030, 40% above current sustainable water supplies. Agriculture, which accounts for approximately 3,100 bcm, or just under 70% of global water withdrawals today, will require 4,500 bcm without efficiency gains.
- Due to the overuse of water, pollution, introduction of exotic species and overfishing, water supplies of nearly 80% of humanity are at risk in terms of biodiversity and availability.
- Experts are virtually certain that demand for energy will rise dramatically—about 50%—over the next 15-20 years largely in response to rapid economic growth in the developing world.
- Up to 3 billion people could join the middle class over the next two decades, boosting resource demands and the need for resource management and productivity in the world's energy, materials, food and water.
- By 2020 copper, aluminum and platinum have the greatest likelihood of encountering supply shortages, rising prices for associated goods worldwide.

## CLIMATE

- According to a 2014 Pew Research global survey, 65% of Latin Americans consider global climate change to be a major threat to their country. The U.S. and the Middle East are the least concerned at 40% and 42% respectively. The average across all countries was 54%.
- Heat, flood, drought, and other extreme weather events continue to be the norm worldwide yielding great human and economic losses.
- New scientific estimates predict significant sea level rise by 2100 – up to 1.5 meters, nearly four times that of previous centuries.
- Flood event frequency is increasing and will continue along the equatorial and tropical latitudes. The intensity and duration of tropical cyclones are also increasing.

## HEALTH

- Urbanization, high levels of vehicle emissions, and westernized lifestyle are correlated with the increasing frequency of respiratory allergies and illness.
- Infectious human and plant diseases are on the rise; globalization has increased the spread of otherwise local diseases. Infectious diseases are now spreading geographically much faster than at any time in history and emerging more quickly than ever before.
- Genetic sequencing may be expected to enable more personalized healthcare by 2030. Likewise fully functional limb replacements, enhanced eyesight, and hearing augmentations may also be widely available.



# EXCERPTS & HIGHLIGHTS FROM GLOBAL TRENDS 2030

## UNPRECEDENTED & WIDESPREAD AGING

Whereas in 2012 only Japan and Germany have matured beyond a median age of 45 years, most European countries, South Korea, and Taiwan will have entered the post-mature age category by 2030. Migration will become more globalized as both rich and developing countries suffer from workforce shortages.

## URBANIZATION

Today's roughly 50% urban population will climb to nearly 60%, or 4.9 billion people, in 2030. Africa will gradually replace Asia as the region with the highest urbanization growth rate. Urban centers are estimated to generate 80% of economic growth; the potential exists to apply modern technologies and infrastructure, promoting better use of scarce resources.

## FOOD & WATER PRESSURES

Demand for food is expected to rise at least 35% by 2030 while demand for water is expected to rise by 40%. Nearly half of the world's population will live in areas experiencing severe water stress. Fragile states in Africa and the Middle East are most at risk of experiencing food and water shortages, but China and India are also vulnerable.

The following excerpts have been taken from the National Intelligence Council's Global Trends 2030 report. Much like this document, the report highlights key themes and issues which will play significant roles in shaping the future over the next 15 years. Many of these themes have been touched upon previously in this document, but the following presents a good overview of the issues driving and framing national policy decisions and discussions.

## MEGA TRENDS

### INDIVIDUAL EMPOWERMENT

Individual empowerment will accelerate owing to poverty reduction, growth of the global middle class, greater educational attainment, widespread use of new communications and manufacturing technologies, and health-care advances.

### DIFFUSION OF POWER

There will not be any hegemonic power. Power will shift to networks and coalitions in a multipolar world.

### DEMOGRAPHIC PATTERNS

The demographic arc of instability will narrow. Economic growth might decline in "aging" countries. 60% of the world's population will live in urbanized areas; migration will increase.

### FOOD, WATER, ENERGY NEXUS

Demand for these resources will grow substantially owing to an increase in the global population. Tackling problems pertaining to one commodity will be linked to supply and demand for the others.

### GROWTH OF THE GLOBAL MIDDLE CLASS

Middle classes most everywhere in the developing world are poised to expand substantially in terms of both absolute numbers and the percentage of the population that can claim middleclass status during the next 15-20 years.

### WIDER ACCESS TO LETHAL & DISRUPTIVE TECHNOLOGIES

A wider spectrum of instruments of war—especially precision-strike capabilities, cyber instruments, and bioterror weaponry—will become accessible. Individuals and small groups will have the capability to perpetrate large-scale violence and disruption—a capability formerly the monopoly of states.

### DEFINITIVE SHIFT OF ECONOMIC POWER TO THE EAST AND SOUTH

The US, European, and Japanese share of global income is projected to fall from 56% today to well under half by 2030. In 2008, China overtook the US as the world's largest saver; by 2020, emerging markets' share of financial assets is projected to almost double.

### US ENERGY INDEPENDENCE

With shale gas, the US will have sufficient natural gas to meet domestic needs and generate potential global exports for decades to come. Increased oil production from difficult-to-access oil deposits would result in a substantial reduction in the US net trade balance and faster economic expansion. Global spare capacity may exceed over 8 million barrels, at which point OPEC would lose price control and crude oil prices would collapse, causing a major negative impact on oil-export economies.

## POTENTIAL GAME-CHANGERS & DISRUPTIONS

### CRISIS-PRONE GLOBAL ECONOMY

Will global volatility and imbalances among players with different economic interests result in collapse? Or will greater multi-polarity lead to increased resiliency in the global economic order?

### GOVERNANCE GAP

Will governments and institutions be able to adapt fast enough to harness change instead of being overwhelmed by it?

### POTENTIAL FOR INCREASED CONFLICT

Will rapid changes and shifts in power lead to more intrastate and interstate conflicts?

### WIDER SCOPE OF REGIONAL INSTABILITY

Will regional instability, especially in the Middle East and South Asia, spill over and create global insecurity?

### IMPACT OF NEW TECHNOLOGIES

Will technological breakthroughs be developed in time to boost economic productivity and solve the problems caused by a growing world population, rapid urbanization, and climate change?

### ROLE OF THE UNITED STATES

Will the US be able to work with new partners to reinvent the international system?

### SEVERE PANDEMIC

No one can predict which pathogen will be the next to start spreading to humans, or when or where such a development will occur. An easily transmissible novel respiratory pathogen that kills or incapacitates more than 1% of its victims is among the most disruptive events possible. Such an outbreak could result in millions of people suffering and dying in every corner of the world in less than six months.

### MUCH MORE RAPID CLIMATE CHANGE

Dramatic and unforeseen changes already are occurring at a faster rate than expected. Most scientists are not confident of being able to predict such events. Rapid changes in precipitation patterns—such as monsoons in India and the rest of Asia—could sharply disrupt that region's ability to feed its population.

### EURO/EU COLLAPSE

An unruly Greek exit from the euro zone could cause eight times the collateral damage as the Lehman Brothers bankruptcy, provoking a broader crisis regarding the EU's future.

### A DEMOCRATIC OR COLLAPSED CHINA

China is slated to pass the threshold of US\$15,000 per capita purchasing power parity (PPP) in the next five years or so—a level that is often a trigger for democratization. Chinese “soft” power could be dramatically boosted, setting off a wave of democratic movements. Alternatively, many experts believe a democratic China could also become more nationalistic. An economically collapsed China would trigger political unrest and shock the global economy.

### A REFORMED IRAN

A more liberal regime could come under growing public pressure to end the international sanctions and negotiate an end to Iran's isolation. An Iran that dropped its nuclear weapons aspirations and became focused on economic modernization would bolster the chances for a more stable Middle East.

### NUCLEAR WAR OR WMD/CYBER ATTACK

Nuclear powers such as Russia and Pakistan and potential aspirants such as Iran and North Korea see nuclear weapons as compensation for other political and security weaknesses, heightening the risk of their use. The chance of nonstate actors conducting a cyber attack—or using WMD—also is increasing.

### SOLAR GEOMAGNETIC STORMS

Solar geomagnetic storms could knock out satellites, the electric grid, and many sensitive electronic devices. The recurrence intervals of crippling solar geomagnetic storms, which are less than a century, now pose a substantial threat because of the world's dependence on electricity.

### US DISENGAGEMENT

A collapse or sudden retreat of US power probably would result in an extended period of global anarchy; no leading power would be likely to replace the United States as guarantor of the international order.



## POTENTIAL FUTURE OUTCOMES

### STALLED ENGINES

In the most plausible worst-case scenario, the risks of interstate conflict increase. The US draws inward and globalization stalls.

### FUSION

In the most plausible best-case outcome, China and the US collaborate on a range of issues, leading to broader global cooperation.

### GINI-OUT-OF-THE-BOTTLE

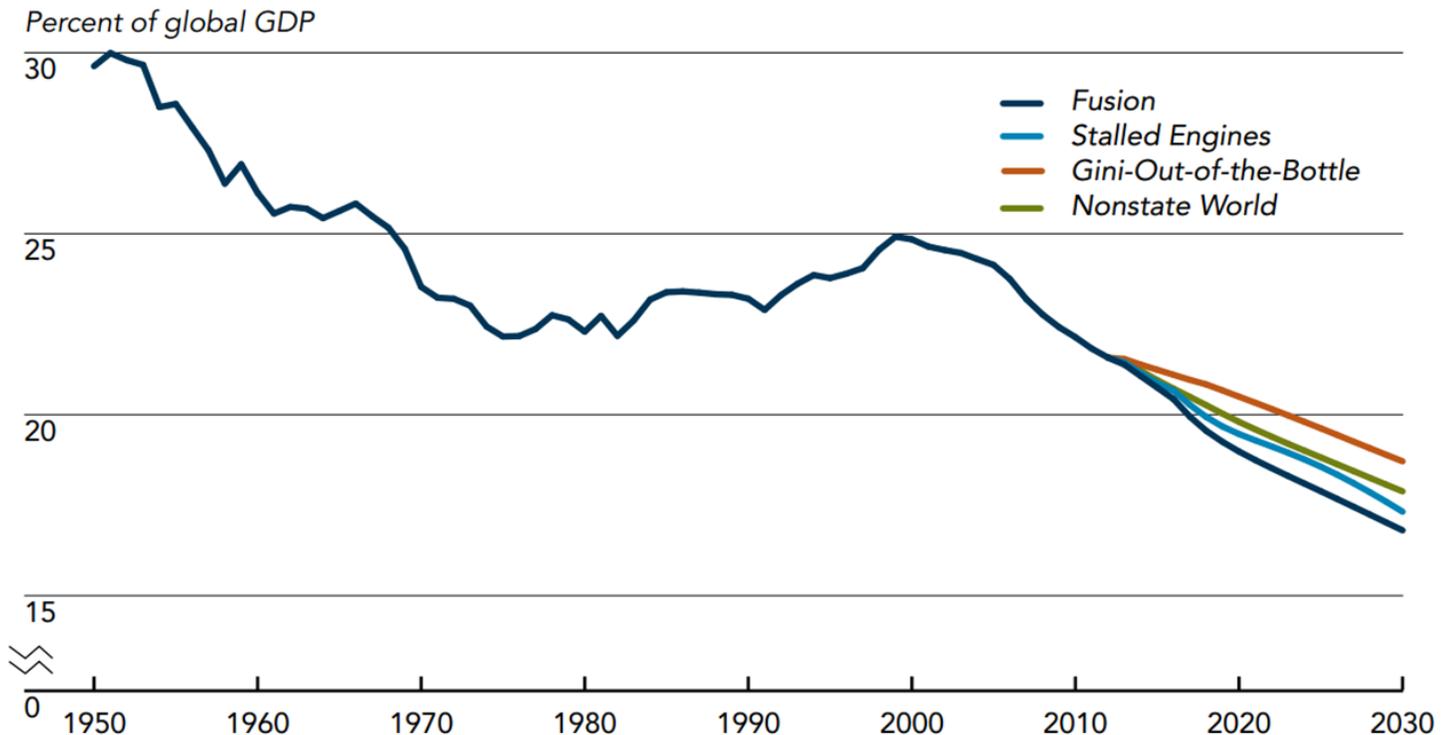
Inequalities explode as some countries become big winners and others fail. Inequalities within countries increase social tensions. Without completely disengaging, the US is no longer the “global policeman.”

### NONSTATE WORLD

Driven by new technologies, nonstate actors take the lead in confronting global challenges.

## US SHARE OF REAL GLOBAL GDP, 1950-2030

The graphic below compares the US share of real GDP in our four scenarios for 2030.



Source: McKinsey Global Growth Model; Angus Maddison; team analysis.

# NATIONAL TRENDS

## NATIONAL ECONOMY

### LONG-TERM INDICATORS

- Productivity is projected to continue to grow faster than it did over the past decade, and US GDP is projected to grow by an annual rate of approximately 2% from 2018 to 2026, according to the CBO. This represents a significant slowdown from the average growth of potential output that was experienced in the 1980s through the early 2000s – largely as a result of slower growth in the nation’s supply of labor.
- The unemployment rate is projected to remain at approximately 5% (slightly above the natural rate of unemployment) over the 2021-2026 period.
- Productivity growth continues to outpace demand growth, resulting in more than 66% of manufacturing job losses over the past decade; outsourcing accounts for only about 20%.
- Between 2000 and 2010 productivity gains (as opposed to labor) have contributed to 80% of total GDP growth, up from 35% in 1970. As the Boomer generation retires and female participation in the economy plateaus, this trend towards greater reliance on productivity is expected to continue.
- As of 2012 the U.S. gender wage gap closed to 82.2%, gaining at a rate of approximately 2.25% annually.
- Over the last decade the U.S. ranking in infrastructure quality fell from 7th to 23rd.

### SHORT-TERM INDICATORS

- US GDP is projected to grow by 2.7% in 2016, and 2.5% in 2017.
- The Congressional Budget Office (CBO) anticipates solid economic expansion in throughout 2016 and 2017. Increases in demand for goods and services are expected to reduce the quantity of underused labor and capital, or “slack” in the economy – encouraging greater participation in the labor force by reducing the unemployment rate and increasing compensation.
- Unemployment is projected to further decrease from 5% in the 4th quarter of 2015 to 4.5% in the 4th quarter of 2016. This would actually represent the economy functioning (temporarily) below the natural rate of unemployment.
- The NFIB Small-Business Optimism Index, a poll of small businesses designed to gage “on the ground” business sentiment was statistically unchanged during the month of March, falling only .3 points to 92.6 (baseline 1986 = 100). Weak sales and a poor economy were cited most frequently among pessimistic business owners, followed by an unstable political climate. From a broader perspective, the index has been trending downward from December 2014 when the index stood at 100 points.
- The Consumer Confidence Index improved modestly in March, ending at 96.2 points, up from 94.0 in February (baseline year 1985=100). Survey data attributes this increase in part to a stabilizing stock market, and reduced negative appraisals of business conditions, and favorable hiring expectations in the labor market.



## DEMOGRAPHICS

- The median U.S. age is 37.1 years old, with 41% of the population between the ages of 25-54, 12% between 55-64, and 14% 65 or older.
- There are approximately 78 million Baby Boomers in the US today and approximately 95 million Millennials (those born between 1978 and 2000) making them the largest generation in US history.
- The U.S. population is expected to expand by 100 million over the next 40 years. The minority population of the U.S., currently at 30%, is expected to exceed 50% before 2050.
- The U.S. fertility rate is 50% greater than Russia, Germany, and Japan, and well above that of China and Europe. This indicator, coupled with migration statistics, puts the U.S. in a much better position to sustain economic growth relative to many of the world’s other major economic powers.

## LONG TERM BUDGET DEFICIT

- According to the CBO, growth in spending (particularly for Social Security, health care, and interest payments on federal debt) will continue to outpace revenue over the next 10 years. The deficit will increase modestly at roughly 2.9% through 2018, and accelerate to 4.9% over the following 8 years. The cumulative deficit from 2017 to 2026 is projected to be \$9.4 trillion.
- The projected 10 year deficits would push publicly held debt to 86% of GDP, a little more than twice the average over the past 50 years. If current laws remain in place, publicly held debt would increase to 155% of GDP – higher than any recorded period in US history.
- Almost half of the projected \$2.5 trillion increase in total outlays from 2016 to 2026 is for Social Security and Medicare.
- Under current policies, the deficit in 2040 would be 5.9% of GDP – the highest percentage of any year between 1947 and 2008. The resulting debt would reach 103% of GDP.
- Likely impacts of federal debt include less available money for private investment in productive capital, leading to less output and income; increased taxes and reduced spending on benefits and services; and less ability for policymakers to respond to unexpected challenges such as economic downturns or financial crises.

## FEDERAL BUDGET

### BIPARTISAN BUDGET ACT OF 2015

- The Bipartisan Budget Act of 2015 expanded the caps on defense and non-defense spending for FY16 to \$548.1 billion and \$518.5 billion respectively (\$1,066.6 billion in total). However, appropriations for emergency requirements or overseas contingency operations may be permitted to expand these caps, and as of December 2015 the caps had been raised by \$58.8 billion for defense and \$14.9 billion for non-defense spending. These caps will still likely be breached unless further expanded by the end of September 2015, threatening another government shutdown.
- The Bipartisan Budget Act of 2015 also cancelled automatic reductions in discretionary spending for 2016 and 2017, and set new caps for 2017 that are a total of \$30 billion higher than they were prior to the passing of the act. The 2017 caps are currently set at \$551 billion for defense, and \$519 billion for non-defense.
- Automatic budget reductions will be enacted beginning in 2018 and represent a 7.9% decrease, or \$91 billion. This will taper downward through 2021 to a 7.2% annual reduction or \$89 billion. These automatic reductions will be proportionately larger for defense spending at approximately 8.9% 2018 or approximately \$54 billion annually.

### BUDGET OUTLAYS

- Federal outlays are projected to rise by 6% in 2016 to \$3.9 trillion, or 21.2% of GDP. That increase is the result of a nearly 7% increase in mandatory spending, a 3% increase in discretionary spending, and a 14% increase in net interest spending.
- In 2016 more than 60% of mandatory spending growth will be allocated to major healthcare programs – namely Medicare, Medicaid, the Children’s Health Insurance Program, and subsidies for health insurance purchased through exchanges and related spending. The other notable contributor to mandatory spending growth will be Social Security.
- In 2016 the primary cause of growing discretionary spending is the Bipartisan Budget Act of 2015, with spending tipped slightly more towards defense spending than non-defense spending.

### SHORT TERM BUDGET DEFICIT

- In 2016, the federal budget deficit will increase, in relation to the size of the economy, for the first time since 2009, according to CBO estimates. The 2016 deficit is expected to be \$544 billion (2.9% of GDP), \$105 billion more than 2015; in 2009 the deficit as a percentage of GDP peaked at 9.8%.
- The increase in 2016 budget deficit is largely attributed to legislation enacted since August 2015 relating to the retroactive extension of a number of provisions that reduce corporate and individual income taxes. (CBO, 2016)
- The deficit projected by the CBO would increase debt held by the public to 76% of GDP by the end of 2016, about 3% higher than 2015 and the highest it has been since the years immediately following WWII.
- The CBO also projects that federal revenues will grow by 4% in 2016 to \$3.4 trillion, or 18.3% of GDP, though not enough to keep pace with increased spending.

## ENERGY

### CONSUMPTION

- U.S. citizens consume one quarter of the world's energy, the mix of which is – 40% Petroleum, 23.6% natural gas, 22.8% coal, 6.8% renewable energy, and 8.4% nuclear energy.

### US OIL & SHALE GAS “REVOLUTION”

- Innovations in hydraulic fracturing have made it possible to recover vast amounts of shale gas in the U.S., leading to a “natural gas revolution”. 20% of the country's natural gas currently comes from domestic shale, a figure that is expected to rise to 46% by 2035.
- The U.S. is on track to surpass Russia as the world's top producer of natural gas in 2015, and to surpass Saudi Arabia in oil production in 2017. Analyst forecasts also indicate that the U.S. will be a net oil exporter by 2030, becoming energy independent.
- Between 2005 and 2014, U.S. production of crude oil and natural gas has risen by nearly 65% and 34%, respectively, due to tight oil and shale gas development.
- The shale gas supplies from Pennsylvania alone equal the entire natural gas export capacity of Qatar, the world's second largest natural gas exporter in 2012. And the increase from light tight oil production in places like North Dakota and Texas over the last five years is equivalent to Iraq's current production levels.
- According to one preliminary assessment, 137 shale formations in the US and 41 other countries hold around 10% of “technically recoverable” global crude oil and 32% of global natural gas.
- US oil and shale gas production along with slower demand growth has decreased the United States' need for imports, while its exports are rising. As a result, traditional U.S. suppliers are increasingly servicing other markets. (US gas imports are down 28% and its oil imports down 16% from 2005 according to the EIA).
- The sudden surge in U.S. energy supply and consequent reduction in natural gas prices have helped make North America among the most attractive and competitive places in the world to locate energy-intensive endeavors.
- Saudi Arabia's bid to hold the price of oil down will need to be watched closely as it will render some of these potential US projects unprofitable and unfinanced.



## RENEWABLES

- Despite the oil and gas boom, US public opinion on energy policy has changed very little (1-3%), with the expansion of alternative energies viewed as a more important priority by a margin of two-to-one (60% to 30%) according to Pew Research Center.
- Although the US is experiencing an oil and gas “revolution”, renewable energies are still expected to grow substantially, nearly doubling over the next 25 years according to the EIA. Much of the oil and gas will be exported, while renewable energy remains a key domestic priority.
- The contribution of renewable energies to the total U.S. domestic energy production rose from 8.9% in 2002 to 12.7% in 2011. During this time, the greatest gains were realized by onshore wind generation, increasing capacity more than tenfold to 119.75 TWh.
- Focusing on locally sourced and recycled materials, affordable green building continues to gain momentum both domestically and abroad.
- Installation prices for distributed PV installations fell by at least 11% in 2013, and have fallen by 44% since 2009. Lower prices increase consumer demand for solar installations is expected to continue at a fast pace.

## GLOBAL IMPACTS OF US ENERGY SUPPLY SHIFTS

The US oil and gas revolution, combined with political unrest in a number of key oil producing nations around the world is dramatically shifting the global energy supply chain. Some of the key possible outcomes and trends to watch for are as follows (source, Center for Strategic and International Studies):

### LARGE PRODUCER: RUSSIA

- Reinforces pre-existing reorientation toward Asian markets.
- Adds to existing energy-sector pressures, reinforcing the necessity of reform.
- Lessens others' interests in the Arctic, to Russia's possible advantage.

### LARGE PRODUCER: SAUDI ARABIA

- Reinforces a reorientation toward Asian markets that were already underway.
- Complicates Saudi Arabia's role as a market balancer.
- Feeds a broader concern over the United States' continued commitment to stability in the Middle East.

### REENTRANTS: IRAN, IRAQ, AND MEXICO

- Raises the stakes for each of the reentrants to get back on the market.
- Puts increased pressure on Organization of the Petroleum Exporting Countries (OPEC) cohesion.
- Accelerates internal pressures for reform.

### REVENUE-DEPENDENTS: YEMEN, NIGERIA, ALGERIA

- Raises concern for potential modest future price decline and risks of instability.

### CONSUMER: CHINA

- Enhances China's energy security position but does not alleviate its overall vulnerability.
- Dampens China's "United States in decline" narrative.
- Offers new possibilities to shift the U.S.-China energy conversation from competition to cooperation.

### CONSUMER: EUROPE

- Helps the United States to rebound economically in ways that widen the gap with Europe and exacerbate competitiveness concerns.
- Increases pressures on Europe's green agenda.
- Does little to alleviate concerns with unpredictable suppliers in Russia and the Middle East and North Africa.

### CONSUMER: JAPAN

- Aided Japan after Fukushima, but unlikely to offer long-term price relief.
- Complicates intra-Asian dynamics.

### CLIMATE

- The rapid supply and demand shifts within global energy markets will almost certainly have significant and as of yet uncertain impacts on climate change negotiations – likely reordering options and priorities.



## TECHNOLOGY

### WORKPLACE

- Additive manufacturing techniques, such as 3D printing, are making prototyping easier and opening up exciting new options to produce intricate products such as aerospace components and even replacement human organs.
- IT is expected to create new platforms to support innovation and growth, help guide strategy, and stay on top of possible new roles for mobile devices. It is no longer a supporting role, but a central element of successful strategy, and must be integrated across all business functions.
- IT strategies will evolve to support the acceleration of employees working at home through the use of VPNs and secure remote work access.
- Social technologies such as LinkedIn, Facebook, YouTube, wikis, and blogs will be further integrated with business applications and strategies as consumers increasingly become their own market drivers through digital consumerism.
- A 2011 SHRM poll showed that 56% of organizations are now using social networking sites when recruiting for potential job openings, up from 34% in 2008. While more recent polling is unavailable, this trend has almost certainly continued.
- As of 2012, 40% of organizations had a formal social media policy.
- A 2011 study by Aberdeen Group found that mobile devices were used by 55% of employers for online forums, 48% for informal learning activities, and 42% for formal learning and development. While more recent polling is unavailable, this trend has almost certainly continued.
- Online training and courses will play a bigger role in the future of workforce development, due in large part to the fact that e-learning has become far more prevalent among younger workers. More than 6.1 million students took at least one online course in the fall of 2010 alone, and 65% of higher education institutions describe online courses as a critical part of their long-term strategy, a trend which has almost certainly continued.
- The total number of workers in the U.S. telecommuting and working from home or elsewhere has actually decreased by some 7 million people, bringing the total to approximately 26.2 million today. Of those, the frequency of their telecommuting has risen substantially, with 45% telecommuting daily.

## TECHNOLOGY & THE GOVERNMENT

- A poll of government IT professionals has found that those working for federal agencies expect that 45% of their IT infrastructure will need to be changed by the end of 2015. State and local agencies by comparison expect that 23% of their infrastructure will need to be changed.
- As of January 2014, 640 federal data centers had been shut down with 470 more scheduled for closing by September. There are 24 participating federal agencies in the Federal Data Center Consolidation Initiative (FDCCI).
- In a bid to keep storage costs down, the government will be continuing to make large investments in cloud technology. Government agencies have averaged a 19% reduction in storage costs after adopting cloud technologies, and are projected to spend \$2.3 billion dollars in 2015 on cloud related services.
- Cloud service investments will be primarily focused in Infrastructure as a Service (IaaS) with a projected \$5.4 billion invested by 2017, followed by Software as a Service (SaaS) with \$2.4 billion, and Platform as a Service (PaaS) with \$1.1 billion.

*“The global digital economy (the total economic output derived from digital skills, equipment, goods and services) accounted for 22% of the world’s economy in 2015... and is forecast to increase to 25% by 2020, up from 15% in 2005.”*

~Accenture, 2016

## PRIVACY

- With 61% of US adults saying they “would like to do more,” to protect the privacy of their personal information online, and 37% say they “already do enough,” it is likely that online privacy will become a notably larger market.
- 80% of adults “agree” or “strongly agree” that Americans should be concerned about the government’s monitoring of phone calls and internet communications.
- Only 36% “agree” or “strongly agree” with the statement: “It is a good thing for society if people believe that someone is keeping an eye on the things that they do online.”
- 91% of American adults say that consumers have lost control over how personal information is collected and used by companies.
- 64% believe the government should do more to regulate what advertisers do with customers’ personal information, compared with 34% who think the government should not get more involved.
- 55% “agree” or “strongly agree” with the statement: “I am willing to share some information about myself with companies in order to use online services for free.”
- 58% feel insecure sending private info via text messages or sending private information via email.
- 46% feel “not very” or “not at all secure” calling on their cell phone when they want to share private information.

## MOBILE & INTERNET USE

- According to a 2015 study by Statistica, the number of people worldwide using social networks will have increased from .97 billion in 2010 to 2.44 billion in 2018.
- According to a 2015 Radicati Group study, the number of mobile devices worldwide will have increased from 9.5 billion in 2010 to 14.8 billion in 2018.
- According to a 2015 report from the BBC, 1 in 7 people on earth use Facebook on a single day.
- 30% of American Internet users now place phone calls online using platforms such as Skype or Vonage.
- In 2013, 85% of American adults used the Internet and 91% owned a cell phone; of those with cell phones, 56% owned a smartphone.
- In 2013, 72% of American adults were on social networking sites, up from 67% in 2012, and just 8% in 2005. The number of 65+ users also tripled over the previous four years to 43%.
- In 2013, 51% of American adults (or 61% of internet users) banked online, and 35% of cell phone owners banked using their mobile device, up from only 18% in 2011.
- In the U.S., 72% of internet users, 31% of cell phone users, and 52% of smart phone users said they looked up medical information and diagnoses online in 2013. 19% of smartphone users also use their phone to track and manage their health.

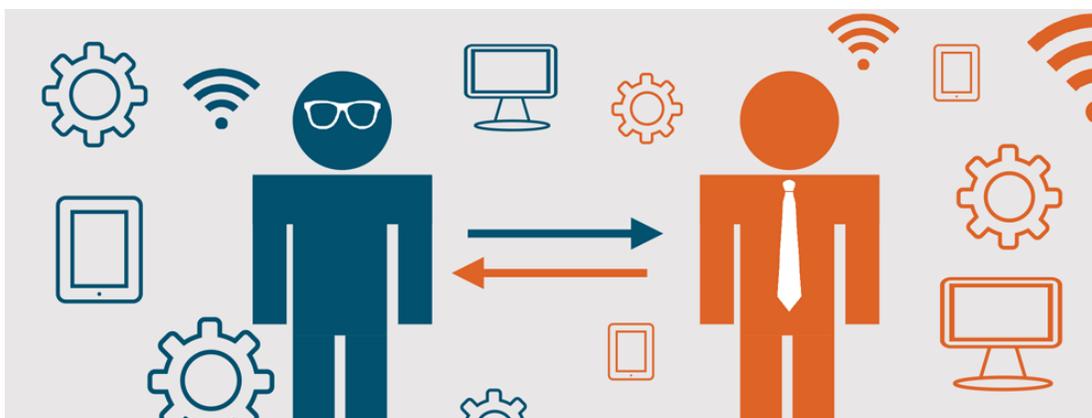
## WORKFORCE

### SKILLS & CAPABILITIES

- In January of 2015 President Obama announced that he would be pushing for a new initiative to provide free community college for qualifying candidates. If implemented and effective, this program could potentially expand the pool of qualified skilled and technical labor.
- According to the National Science Foundation (NSF) the number of science and engineering occupations increased from 182,000 in 1950 to 5.4 million in 2009, an average annual growth rate of 5.9%. The total workforce, by comparison, grew at an annual rate of only 1.2%.
- Over the next decade the U.S. is facing a 1.9 million person shortfall in technical and analytical workers.
- In the U.S., occupations typically needing a master's degree or an apprenticeship are projected to grow by 20-23% between 2010 and 2020.
- A significant shortage of skilled technical and analytical workers is projected over the next 15 years. It will be increasingly necessary to get involved directly with the education system in order to train and recruit the best talent possible.
- In a 2013 survey of 9,000 HR professionals, 43% believed the biggest investment challenge facing organizations in the next ten years will be obtaining and optimizing human capital investments. By contrast, 22% believed it would be obtaining and optimizing financial capital investments, 19% technological capital investments, and 14% intellectual capital investments.
- Of 9,000 HR professionals surveyed in 2013, 74% predicted that the shortage of skilled workers would have a "major impact" in the next five years.
- 87% of HR professionals surveyed reported difficulty recruiting qualified candidates. This is most pronounced in the category of scientists, where 92% reported difficulty finding qualified candidates, engineering at 88%, and high-skilled technical positions at 87%.
- The percentage of HR professionals reporting that applicants are lacking basic math skills increased from 52% in 2012 to 57% in 2013; those reporting applicants deficient in "writing English" increased from 43% to 46%; and those reporting applicants lacking "English reading comprehension" skills increased from 39% to 41% in 2013.

### DEMOGRAPHICS

- With Baby Boomers retiring, a leadership void is anticipated across most industries. Many Millennials will not be far enough along in their careers to replace these senior figures, and the older but much smaller Generation X will not be able to keep pace with the rate of upcoming retirements.
- The Bureau of Labor Statistics estimates that between 2010 and 2020 there will be 54.8 million job openings, with 61.6% of those openings resulting from "replacement needs", i.e. Retirements.
- As the workforce ages, employees are more prone to suffer from chronic health conditions such as diabetes, high blood pressure, heart problems and cancer. Promoting healthy lifestyles in the workplace will become increasingly important.
- Employee loyalty is at an all-time low due to the fluid and uncertain nature of today's job market. The best way cited by the Harvard Business School to retain employees and to foster productivity is to invest in training and development.
- From 1993 to 2008, the median age of scientists and engineers in the US workforce rose from 37 to 41, and the proportion of those over 50 increased from 18% to 27%; the result of which will be science and engineering professions being disproportionately impacted by retiring Baby Boomers.



## MANAGEMENT IN A GLOBAL ECONOMY

### STATE OF AFFAIRS

- The top three most commonly used management tools in the world are strategic planning, customer relationship management, and employee engagement. In the US the top three are employee engagement surveys, strategic planning, and benchmarking.
- The five management tools with the highest average satisfaction rating from executives worldwide are big data analytics, customer relationship management, total quality management, strategic planning, and open innovation.
- In a McKinsey survey of several thousand executives, some interesting differences in strategy execution emerged across cultures. Executives from China were significantly more likely than North Americans to say that their strategy was built to win in future market conditions based on major trends; they were also more likely to respond that their strategy emphasizes creating relative advantage over competitors. North Americans however were significantly more likely to state that their strategy balances major commitments with flexibility to make future choices.
- Two thirds of global executives report that they believe brand loyalty is decreasing, a trend that will be especially threatening in the consumer products arena.
- Approximately 50% of global executives indicate that IT systems are hindering growth, with 65% adding that increasing IT spending as a percentage of sales is a priority over the next three years.
- A 2013 Bain & Company survey of 1,208 global executives has found that 81% believe substantial opportunities exist to improve both sustainability and profitability; 75% believe the ability to adapt to change is a significant competitive advantage; and 74% believe that innovation is more important than cost reduction for long-term success.

### WORKPLACE

- According to the National Alliance for Caregiving, an estimated 65.7 million people in the US have served as unpaid family caregivers to an adult or child, and an estimated 36.5 million households have a caregiver present. With the population aging and number of caregivers increasing, the need for more flexible work policies will continue to grow.
- A 2010 MetLife study on employed caregivers found that employees responsible for elder care reported more health problems than those who did not. The financial impact to employers is estimated to be \$13 billion annually or 8% more per care giving employee.
- A 2013 study by the Society for Human Resource management (SHRM) found that 36% of firms were increasing flexible work options. This is due to the rise in caring responsibilities, two-income families, single parenthood, and the entrance of a new generation into the workforce that places a premium on work-life balance.
- The 2013 SHRM survey found that between 2005 and 2012 the percentage of firms using flextime increased from 66% to 77%; the percentage offering time off during the workday to attend to important family or personal needs without loss of pay increased from 77% to 87%; and the percentage of employees able to work some of their regular hours at home, at least on an occasional basis increased from 34% to 63%.

### MERGERS & ACQUISITIONS

- According to a Bain & Company survey of executives who have managed through mergers, the number one reason for a merger's failure is culture clash.
- According to US executives, customer retention/expansion and achieving cultural fit are both the most important factors in realizing a successful integration, and also the most challenging.
- 55% of corporate executives cite failure to integrate as a top concern.
- Industries which analyst anticipate will see the greatest increase in M&A activity are technology, healthcare, alternative energy, oil and gas, and banking.
- When polled, 42.6% of executives cite expanding customer base in existing geographic markets as extremely important to their M&A strategy; 31.6% cited cost synergies or scale efficiencies, and 31% entering new geographic markets.

## FAMILY, SOCIETY & CULTURE

### MILLENNIALS

- According to Pew Research, 43% of Millennials (aged 18-33) are non-white, the highest of any generation. Approximately 50% of newborns this year will also be non-white, with the full US population being majority non-white by around 2043.
- More than a third of older Millennials (26-33) have a four-year college degree or more, making them the best-educated cohort of young adults in US history.
- Two thirds of recent bachelor's degree recipients have outstanding student loans, with an average debt of about \$27,000. Two decades ago, only half of recent graduates had college debt, and the average was \$15,000.
- As of 2014, Pew Research found that 36% of American adults aged 18-31 are now living with their parents, up from 32% before the 2008 recession. A Federal Reserve Bank of New York staff report also found that the number of 25-30 year olds living with their parents increased by 63% from 2000 to 2013; significantly, they found that while home prices and unemployment were important factors in this trend, the single most important factor was the rise of student debt which attributed to approximately 50% of the increase.
- Millennials (18-33) are getting married latter than ever before. The percentage of Millennials married between the age of 18-32 is only 26%, compared to 36% of Gen X (34-49), and 48% of Boomers (50-68) during that age period. The average age of Millennials marrying is now 27.1 for women and 29.1 for men, compared to 20 and 23 respectively in 1950.
- Perhaps because of their slow journey to marriage, Millennials (18-33) lead all generations in the share of out-of-wedlock births. In 2012, 47% of births to women in the Millennial generation were non-marital, compared to 35% for Gen Xers (34-49) and 15% of Boomers (50-68) when they were of the same age.
- Not only do half of all Millennials (18-33) choose not to identify with either political party, just 31% say there is a great deal of difference between the Republican and Democratic parties (although they have tended to vote more Democratic). More people in older generations, including 58% of Silents (69-86), say there are big differences between the parties. Millennials are also markedly socially untrusting (19% believe "most people can generally be trusted" vs 40% of Boomers).
- Millennials have also been found to be far more likely to be religiously unaffiliated (29% vs 16% of Boomers) and less likely to be married (26% married vs 48% of Boomers between the ages of 18-32)

### FAMILY & HOUSEHOLDS

- A record 57 million Americans, or 18.1% of the population of the United States, lived in multigenerational family households in 2012, double the number who lived in such households in 1980. (Defined as households with at least two adult generations with the youngest being at least 25).
- A record 8% of households with minor children in the U.S. are headed by a single father today, accounting for 24% of all single parent households. In 1960 single father households accounted for only 1% of families. Nearly 21% of stay at home fathers say the main reason they are at home is to care for their family, this is a fourfold increase from 1989, suggesting that the trend will likely continue.
- A record 40% of mothers with children under the age of 18 are now the sole or primary source of income for the family. In 1960, this number was only 11%, marking an upward trend with no signs of slowing down.
- The rate of new marriages is steadily decreasing at about 5% per year and is expected to continue. In 2010 barely half of American adults were married, a record low from 72% in 1960.
- Religion is losing relevance in the U.S. 20% of American citizens consider themselves religiously unaffiliated, up 5% since 2008; within the younger demographic (aged 19-29), the percentage rises to 32%.



## NATIONAL SECURITY

### REGIONAL CHANGES

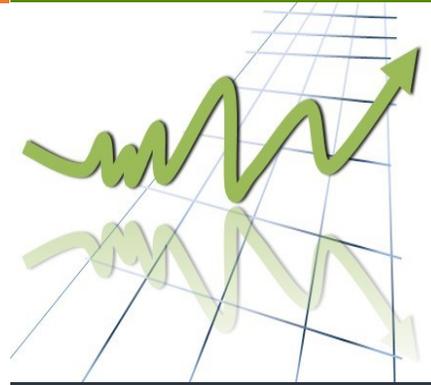
- Given the advance of ISIS and escalating tensions with Russia in Europe, and China in the South China Sea, US policy, deployment, and military spending will likely increase or shift in these regions. Policy changes will have both short and long term political, military, and economic implications.
- China will continue to grow its military in large part to protect its global supply chain for raw materials. This will spur other regional players to increase military spending as well, increasing tensions and rising the risk of conflict.

### CYBER SECURITY

- 43% of North American CEOs report being very concerned about a potentially crippling impact of a cyber-attack on their business.
- The Ponemon Institute reported in September that 43% of firms in the United States had experienced a data breach in the past year.
- Possible cyber-attacks from terrorists or other hostiles loom as a growing threat. 50% of security experts consider cyber-attacks from China to be a “very serious problem for the US”, although 47% also admitted they had limited knowledge of the problem.
- Thousands of experts and internet builders were asked by Pew Research “By 2025, will a major cyber-attack have caused widespread harm (loss of life, property/damage/theft at the levels of tens of billions of dollars) to a nation’s security and capacity to defend itself and its people?” The main points of those who answered “yes” may be summarized as:
  - The Internet is a critical infrastructure for national defense activities, energy resources, banking/finance, transportation, and essential daily-life pursuits for billions of people. The tools already exist to mount cyber-attacks now and they will improve in coming years.
  - Security is generally not the first concern in the design of Internet applications. The world will only wake up to these vulnerabilities after catastrophe occurs.
  - Major cyber-attacks have already happened, for instance the Stuxnet worm and attacks in nations where mass opposition to a regime has taken to the streets. Similar or worse attacks are a given.
  - Cyber-attacks are a looming challenge for businesses and individuals. Certain sectors, such as finance and power systems, are the most vulnerable.
- The main points of those who answered “no” may be summarized as:
  - There is steady progress in security fixes. Despite the Internet’s vulnerabilities, a distributed network structure will help thwart the worst attacks. Security standards will be upgraded.
  - Deterrence works, the threat of retaliation will keep bad actors in check, and some bad actors are satisfied with making only small dents in the system so they can keep mining a preferred vulnerability and not have it closed off.
  - Hype over cyber-attacks is an exaggeration of real dangers fostered by the individuals and organizations that will gain the most from creating an atmosphere of fear.

## POLITICS

- November 2016 will yield a new President with significant impact to domestic and international policy. There are still too many candidates, variables, and time left in the primaries at the time of this publication to offer any meaningful insight into the implications each of the 8 possible presidencies.
- Regardless of who wins the election, it is clear that the public is frustrated by perceived “establishment politicians” who are thought to be out of touch and/or too slow to enact change. This sentiment will likely grow stronger in subsequent elections unless meaningful reform is taken to address political gridlock and partisanship.
- Partisan gridlock continues to characterize the House and Senate. According to the Pew Research Center, the two parties have never been more polarized in the 65 years that statistics have been collected.
- Public trust in government is at its lowest since polling began in 1960 when 73% of the public trusted the government “just about always/most of the time”. Today public trust is at 19% following a decade of decline, and it continues to wane despite the unprecedented lows.
- While the public’s approval of Congress continues to measure near record lows, federal agencies and workers are still viewed favorably. 62% of Pew Research survey respondents reported that they viewed federal employees at large favorably, with the top three agencies being the CDC, NASA, and the Defense Department respectively.
- Beginning of 2014, 47% of Americans believed that the gap between rich and poor was a “very big problem”, 66% thought that gap had increased in recent years, and 61% believed that the economic system favored the wealthy. While these sentiments have become more prevalent in recent years and are important to note, the percentages are below average across the board when compared to other developed countries.
- Debate continues in the U.S. over the extent to which the government should be allowed to intrude on the privacy of its citizens. The debate may yield greater oversight of such programs or normalize these activities.



### *LCA's Highlights of* **Emerging Trends**

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## PHYSICIAN SHORTAGES

- The growing physician shortage is a result of a rapidly expanding Medicare population and limits on support for physician training. The projected shortage of between 61,700 and 94,700 physicians by 2025 includes both primary and specialty care, with specialty shortages being particularly acute. (AAMC, 2016)
- By 2025 the shortfall in the number of primary care physicians needed is projected to be between 14,900 and 35,600. The shortfall for non-primary care physicians is projected to be between 37,400 and 60,300 – that includes 3,600-10,200 medical specialists, 25,200-33,200 surgical specialists, and 22,200-32,600 other specialists. (AAMC, 2016)
- 36% of doctors are currently over the age of 55. Meanwhile, the U.S. population under the age of 18 is only projected to grow by 5% through 2025, while the elderly population is projected to grow by 41% during this time. The higher per capita consumption of health care for seniors will contribute to a significant gap between healthcare supply and demand. (AAMC, 2016)
- In a survey of 1,000 consumers, 75% said that they were open to clinical “extenders” such as nurse practitioners and physician assistants performing a wide range of services. (PwC Health Research Institute, 2015)

## MEDICAL SCHOOL ENROLLMENT

- The number of schools reporting concerns regarding their number of clinical training sites increased by 26% from 2010 to 2014. In 2014, 87% of schools expressed concern about both the number of clinical training sites and the supply of qualified primary care preceptors. (AAMC, 2015)
- Medical schools are concerned about enrollment growth outpacing growth in Graduate Medical Education (GME), with 71% of schools reporting that this is a major or moderate concern in their state, and 86% expressing similar concern at a national level. (AAMC, 2015)

***“We must welcome the future,  
remembering that soon it will be the past;  
and we must respect the past,  
remembering that it was once all that was humanly possible.”***

~George Santayana, Philosopher



*LCA's Highlights of*

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