Digital Academy & Business Generator

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Proprietary Information

Jobenomics Digital Academy & Business Generator

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Executive Summary

The Jobenomics Digital Academy & Business Generator consists of a combined entrepreneurial and enterprise center to exploit career and business opportunities afforded by the dramatic rise in the digital economy and digital domain. The primary purpose of the Digital Academy is to attract, assess, coach, train, and certify candidates in digital technologies via a lifelong applied learning and transformation mapping process. In addition, the Jobenomics Business Generator uses the Jobenomics Community-Based Business Generator process to mass-produce startup firms (e.g., around one hundred new nonemployer firms and micro-businesses per month) in underserved or under-resourced communities. This center will also include a training and computer center, startup offices, conference room, Entrepreneur Club, and cafe.

Prologue

In its twelfth year, the Jobenomics international Grassroots Movement now enjoys millions of followers and dozens of chapters on four continents. The Movement specializes in economic, community, small business, and workforce development in underserved communities. The pandemically-induced stalled economy, failing small brick-and-mortar business sector, and 100 million sidelined adults no longer looking for a job are making the conditions in these under-resourced communities (as well as the U.S. economy in general) increasingly precarious. However, there is some very positive news. Despite stay-at-home orders, quarantines, hospitalizations, and deaths, the pandemic unexpectedly birthed the rise of COVID-preneurs and a historically high number of new business applications during the darkest days of the pandemic.

Monthly New Business Applications

Source: U.S. Federal Reserve Bank of S. Louis[12]

[1] U.S. Federal Reserve Bank of S. Louis, Business Applications: Total for All NAICS in the United States, Number, Monthly, Seasonally Adjusted, retrieved 10 July 2021, https://fred.stlouisfed.org/series/BABATOTALSAUS

[2] U.S. Census Bureau, Business Formation Statistics, https://www.census.gov/econ/bfs/pdf/bfs_current.pdf

In 2020, the U.S. Census Bureau recorded a historically high number of new business applications that were three times higher (298%) than the low during the last financial crisis (551,657 in July 2020 during the peak of the COVID pandemic versus 185,276 in December 2008 at the height of the Great Recession). COVID-preneurs submitted a record 4,346,670 new business applications in 2020, increasing 24% over 2019. Business applications in 2021 are also soaring, with 2,808,023 new filings in the first six months. At this rate, 2021 may have as many as 5.6 million business applications, a 60% increase over 2019 and an enormous 123% rebound over 2008. The COVID pandemic outperformed the Great Recession in generating business optimism is largely due to **the power and promise of the digital economy**.

In the words of one of America's greatest thinkers (Albert Einstein), "in the midst of every crisis lies great opportunity." The great opportunity created by the COVID crisis is explosive growth in the digital economy that advanced by a decade over the last year. The pandemic forced significantly more consumers and businesses to rely on digital technology to buy and sell products and services during the crisis. E-commerce, edtech, fintech, e-health, blockchain, artificial intelligence, mobile apps, and the entire digital ecosystem seem to be on steroids.

While traditional in-store retail sales soured (-0.2%) during the pandemic in 2020, e-commerce retail sales soared by 32% over the prior year. The annual e-commerce sales growth from 2020 through 2025 will outpace non-e-commerce sales by 11-to-1 (18.6% compared to 1.6% YoY growth). In 2025, this ratio is estimated to reach 23-to-1 (13.7% versus 0.6%). Consequently, e-commerce is on track to become the dominant way Americans purchase goods and services somewhere in the 2030s.

Digital startups are ten times easier to create than traditional brick-and-mortar startups. They are also significantly less expensive to start since the bulk of their infrastructure is in the cloud, and support staff is available as needed online. Consequently, the fastest way to propel local economies in underserved and under-resourced communities is by mass-producing digital economy startups.

Startups are the seed corn of the U.S. economy. During the pandemic, the media overwhelmingly showed the demise of approximately small businesses. While the COVID lockdowns decimated about 200,000 brick-and-mortar firms, digital startups flourished. According to the U.S. Bureau of Labor Statistics, the average weekly new business applications in 2020 grew at the fastest rate since 2007 and nearly 80% higher than in 2008 and 2009 during the Great Recession. During the height of the lockdown and stay-at-home orders (March to June 2020), COVID-preneurs started firms at a rate 40% higher than during the Great Recession years.

Equally important, the American public is embracing the rise in startup creation. Per a June-July 2020 Gallup poll, Americans rated small business institutions #1 of 16 categories with an approval rating of 75%, slightly higher than the second-place finisher, the U.S. military, with 72%. The U.S. medical system came in third at 51%. The bottom three institutions were big business, television news, and Congress at 19%, 18%, and 13%.

Consequently, the digital economy offers a unique opportunity for policymakers to mass-produce jobs and startup businesses. Affordable Jobenomics Digital Academy & Business Generators can generate well-paying digital careers in every city, town, community, or neighborhood that wants to prioritize locally-owned business creation. Since only one-third of the U.S. workforce has the digital skills to succeed in the digital domain, the need is great.

The United States workforce is ill-equipped to perform and compete effectively in the digital domain. Although most working-age adults use the internet every day, they lack the skills to meet today's growing demand for trained digital professionals. More than eight out of ten middle-skill jobs require digital skills. Digital middle-skill jobs represent roughly 40% of overall job postings. Yet, the USA has over 10.3 million unfilled job openings. An additional 3.4 million more unfilled digital jobs are likely in 2022.

The primary reason for these job openings is a lack of a digitally skilled labor force. Across all industries, data show that 31% of U.S. workers have no or limited foundational digital skills. 35% of all workers have only a baseline level of proficiency and struggle with new digital tasks. That leaves only 33% of all workers with advanced digital skills to prosper in the digital domain. While it might seem that younger workers would be uniformly digitally literate, 43% of U.S. workers aged 16 to 34 have no or limited digital skills. With this poor talent level, the United States cannot effectively compete in the digital domain.

Over the next decade, labor demand changes require upskilling programs to transition workers from routine tasks into jobs requiring more technological and interpersonal skills. Careers and businesses depend on communication and social skills, and technical skills. Therefore, a proper combination of so-called soft and hard skills will determine competitiveness in the digital economy.

The U.S. Workforce Innovation and Opportunity Act[3] defines digital literacy as "the ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring cognitive and technical skills." While technical training is essential, its worth as a door opener to numerous career and business pathways is invaluable.

The Jobenomics Digital Academy & Business Generator will provide career and business development pathways for students (of all ages) interested in the Digital Economy. Rather than being hubs for tech innovation, the Jobenomics Digital Academy & Business Generator Program focuses on digital literacy, certified skills-based training, pathways to entry-level careers in the digital domain, and startup digital technology-related businesses.

Digital literacy is the foundation upon which everything in the Digital Economy depends. To be digitally literate, one must first be literate in basic educational skills. According to the OECD, of

[3] A collaborative effort between the U.S. Congress, U.S. Departments of Labor (DOL), Education (ED) and Health and Human Services (HHS), see https://www.dol.gov/agencies/eta/wioa

the top 77 nations, the USA ranks 13th in reading, 18th in science, and 27th in math. America's digital near-peer competitor, China, ranks 1st in each category.[4]

Over the next decade, labor demand changes require reskilling and upskilling programs to transition workers from routine tasks into jobs requiring more technological and interpersonal (awareness, empathy, collaboration, leadership, conflict management/resolution, and entrepreneurial) skills. Careers and businesses depend on communication and social skills as much as technical skills. Therefore, a proper combination of so-called soft and hard skills will determine our nation's competitiveness in the digital economy.

Consequently, this document contains the following chapters, including a detailed discussion on the state of U.S. digital literacy and the digital economy and the rationale for a national-level initiative to implement hundreds of digital academies and business generators across the United States:

- Chapter 1. Digital Literacy & Competitiveness
- Chapter 2. Emerging Digital Economy
- Chapter 3. Startup Micro & Nonemployer Business Imperative
- Chapter 4. Jobenomics Community-Based Business Generators
- Chapter 5. Jobenomics Digital Academy & Business Generator
- Chapter 6. Jobenomics Sprung Alliance Facilities

This document is **provided free for use and distribution** in hopes that it will inspire thought-leaders and policymakers to take action to upskill the U.S. labor force and mass-produce digital startup businesses.

[4] Organisation for Economic Co-operation and Development (OECD), Programme for International Student Development (PISA), PISA 2108 Rankings, https://www.oecd.org/pisa/

Digital Economy

The **Digital Economy** (also known as the web economy, internet economy, network-centric economy, or the new economy) is (1) transforming economies, (2) revamping existing institutions, governments, businesses, and workforces, (3) instituting new ideas, beliefs, behaviors, and cultures, and (4) changing human endeavor. The speed of digital transformation is both brilliantly innovative and creatively disruptive. The digital economy will create millions of new U.S. small businesses and tens of millions of jobs with proper focus and leadership. Communities with a laissez-faire approach to the digital age's transformative power will erode their economy, business base, and labor force.

As summarized below, there are at least nine unique but intertwined subcategories that define the emerging Digital Economy:

- **Electric/Mobile-Commerce**: the buying and selling of goods and services or transmitting funds or data via digital networks. The pandemic accelerated electronic retail sales (an e-commerce subcategory) a decade ahead of expectations and accounted for over $860 billion in 2020, up 44% from 2019. 80% of smartphone users now engage in mobile commerce to make online purchases.

- **Sharing Economy** is a peer-to-peer, access-driven business model characterized by the ability to share or trade (goods, knowledge, money, time, skills, content, etc.) rather than buy or own. 86 million Americans used the sharing economy so far in 2021, with an anticipated 2,000% growth over the next decade.

- **On-Demand Economy**: a business model where consumer demand is satisfied by near real-time provisioning of goods and services. 22 million U.S. users. The global on-demand economy should exceed $1 trillion in 2021, accelerated by increased usage (pandemic related) of online entertainment, next-day delivery, and meals-to-go.

- **App/Bot/AI Economy** refers to the range of economic activity surrounding intelligent web-based applications. Apps (applications) are the digital interface through which we live, work, play, and the primary way we engage with media, brands, and ultimately with each other. A bot, also known as a web robot, an internet chatbot, or simply bot, is an interactive, artificial intelligence-driven software application that runs automated tasks or simulates a conversation to deliver text-, voice- or video-based information via a networked device. Artificial intelligence (AI) is the intelligence exhibited by machines or software that can do things typically done by people. AI economy impact is estimated at 14.5% of U.S. GDP ($3.7 trillion) by 2030.

- **Platform Economy** encompasses DTR-enabled social, business, and government activities. A platform (network) business model creates value by facilitating exchanges between interdependent groups, usually consumers and producers. Retail (pipe model) stores are giving way to e-retailing (platform model). For example, healthcare is now emphasizing outpatient and telemedicine (platform) services in addition to inpatient (pipe) care. The Platform Economy is also a network platform business model where mega-technology corporations exploit network effects to garnish greater and greater influence and control of significant segments of society and the global economy. The top-5 U.S. tech firms (Apple, Microsoft, Amazon, Alphabet/Google, and Facebook) market value is over $8.4 trillion, around 300% more than India's economy, which supports 1.4 billion people.

- **Creator Economy** entails earning income from making and distributing online content. With the advent of streaming video, online entertainment, social media, and video sharing, new and fresh forms of content are in high demand. New content producers have skyrocketed with new smartphone video technology and inexpensive and high-quality mobile action cameras (e.g., GoPro). The fledgling Creator Economy (paid) consists of more than 50 million independent content creators, curators, and community builders, including social media influencers, bloggers, videographers, and technology providers, of which 2 million are full-time professionals. These statistics do not include content creators that work for the established television, film, and streaming service industries—a huge source of business and jobs for these independent creators.

- **Gig/Contingent Workforce Economy** is an environment where temporary positions are common, and organizations contract with independent workers for short-term engagements. The Gig/Contingent Workforce Economy is creating an employment landscape that provides an opportunity for workers in the future economy where part-time and temporary workers outnumber full-time workers with standard workforce agreements. The gig/contingent workforce soon will be the dominant (50%) form of labor in the United States based on (1) the emerging digital economy, (2) revolution in digital and network technologies, (3) automation of manual and cognitive jobs, (4) shift from full-time to task-oriented labor, and (5) cultural differences of new labor force entrants.

- **Data-Driven Economy** involves accessing and exploiting information and knowledge in big-data pools to maximize operational efficiencies and reduce costs. While difficult to measure, McKinsey Global Institute estimates that the economic impact of Big Data could generate $30 trillion in additional value this decade in seven industries (education, transportation, consumer products, electricity, oil and gas, health care, and consumer finance).

- **Internet of Everything (IoE) Economy** expands Internet of Things (IoT) machine-to-machine interactions to an ecosystem encompassing people and processes. IoE is well on its way to connecting tens of billions of things to enable billions of connected people. Cisco estimates that 99.4 percent of physical objects that may one day be part of the IoE

are still unconnected. With only about 10 billion out of 1.5 trillion things currently connected globally y, there is vast potential to "connect the unconnected." The economic impact of IoT alone is estimated at $11 trillion by 2025, with 75 billion connected devices. The Internet of Behaviors (IoB) uses IoT/IoE technology to influence behavioral changes from healthcare wearables to consumer monitoring to behavioral care applications (mental illness, childcare, etc.).

The Industrial Revolution (IR) transformed America from an agricultural-based society to an industrial-based nation. The post-WWII Military Technology Revolution (MTR) underpinned the creation of the world's largest economic superpower. The 1980s Information Technology Revolution (ITR) ushered in an information age of prosperity and international commerce. Today, the Digital Technology Revolution (DTR) is reshaping the global economy. Like the IR, MTR, and ITR, the DTR could create millions of startup U.S. businesses, tens of millions of new American jobs, and countless other economic and social benefits.

The DTR is not ITR 2.0. While both are revolutionary, the DTR is significantly more disruptive than its earlier and benign ITR cousin. ITR tools assist and enhance humanity's productivity. DTR's artificially intelligent agents and bots augment and replace human endeavor. The DTR represents a perfect storm of technologies that emulate human form, attributes, and intelligence. The DTR will **create** 10s of millions of net new American jobs. On the other hand, numerous studies forecast that the DTR will eliminate about half of all American jobs within the next two decades.

Jobenomics Community-Based Business Generator

Business startups succeed by satisfying pain points in a scalable way. The communities with the most pain include beleaguered inner-city neighborhoods and financially distressed rural areas. Numerous communities consider the **Jobenomics Community-Based Business Generator concept** as an ideal way to train, certify, and mass-produce self-employed and independent contractor nonemployer businesses to alleviate poverty and crime pain points. Data shows that for every 1% of startup business growth, poverty and crime are reduced by 2% each.

Economic development professionals often create jobs via **business incubators**, **accelerators, and generators**. Jobenomics endorses all three methods but specializes in business generators.

- Many cities have **business incubators**, usually located at or around universities or technology parks, and business accelerators associated with mezzanine financing institutions. Business incubators tend to focus on high-tech, silver bullet innovations with extraordinary growth and employment potential.
- **Business accelerators** usually focus on expanding existing businesses to make them bigger and more profitable. Accelerators offer a range of support services and mezzanine financing opportunities. Startup accelerators support early-stage, growth-driven companies through education, mentorship, and financing. Startup accelerator financing usually involves venture capital in exchange for equity or an ownership stake.

- A Jobenomics **business generator** involves mass-producing micro (employer firms with 1-19 employees) and nonemployer (firms with no employees) firms, emphasizing highly scalable and repeatable businesses in underserved and under-resourced communities.

Jobenomics Community-Based Business Generators mass-produce startup businesses by: (1) working with community leaders to identify high-potential business owners and employees, (2) executing a due diligence process to identify potential high-quality business leaders and employees, (3) training and certifying these leaders and employees in targeted occupations, (4) creating highly repeatable and highly scalable "turn-key" small and self-employed businesses, (5) establishing sources of startup funding, recurring funding and contracts to provide a consistent source of revenue for new businesses after incorporation, and (6) providing mentoring and back-office support services to extend the life span and profitability of businesses created by the Jobenomics Community-Based Business Generators.

Over the next several decades, the digital economy will create 10s of millions of new careers and millions of new startup businesses. To capture the maximum number of jobs and startups, communities need to implement community-based business generators.

As described below, the types and amounts of new jobs and firms are enormous and beyond the grasp of most policymakers and the American public.

Micro & Nonemployer Startup BusinessTypes

According to an Ardent Partner study, from 2009 through 2019, nonemployee contingent labor (self-employed, independent contractors, freelancers, professional services, and traditional temporary workers) working in the Gig Economy skyrocketed from 20% to 43%. In 2019, early 80% of all companies used contingent workers. [5]

In 2016, the McKinsey Global Institute (MGI), a premier research institution, published a bellwether survey entitled “Independent Work: Choice, Necessity, and the Gig Economy” that

[5] Ardent Partners, The State of Contingent Workforce Management 2020, Navigating Disruption and Uncertainty with an Agile Workforce, May 2020, The State of Contingent Workforce Management 2020: Navigating Disruption and Uncertainty with an Agile Workforce by Ardent Partners - Workforce Logiq

came to a similar conclusion the U.S. gig workforce was significantly greater (68 million) than previously estimated. The MCI was also substantially large compared to other independent surveys, including MBO Partners (40 million), Burson-Marsteller (45 million), Kelly Services (50 million), and Freelancers Union (55 million).[6]

In 2019, Freelancers and Upwork (an American freelancing platform) commissioned Edelman Intelligence, an independent research firm, to conduct their sixth annual study of the U.S. freelance workforce.

The pandemic accelerated the contingent workforce utilization by as much as a decade in 2020-2018, making these citizens the dominant form of U.S. labor. Fueled by a perfect storm of disruptive technologies, the digital economy will amplify the agile use of task-oriented work from home offices. Some of the most interesting statistics from the 2019 Freelancing in America survey from a career and startup business perspective included:

- **56.9 million** Americans freelanced in 2019, representing **35% of the U.S. workforce**.
  - **Independent contractors** (18.8 million or 33% of the independent workforce),
  - **Diversified workers** (17.1 million or 30%), people with multiple sources of income, such as Uber, coding, bartending, and dog-walking.
  - **Moonlighters** (14.8 million or 26%), individuals who work outside their primary employer,
  - **Freelance business owners** (2.8 million or 5%), freelancers with employees, and
  - **Temporary workers** (3.4 million or 6%), individuals doing task-oriented work, like data entry.
- Freelancing makes up nearly 5% of GDP, more than the U.S. construction and transportation industries.
- **52% of surveyed freelancers would replace their college education entirely with training tailored to their current occupation.**

The Jobenomics Community-Based Business Generators process focuses on preparing workers for starting a business or using the experience to be more competitive to get a job. In today's world, gainful employment is challenging and oriented to those currently employed, credentialed, or high-skilled. Conversely, a common complaint that Jobenomics often hears from companies is that they have a tough time (1) finding good people who want to work, (2) who have the right attitudes and aptitude for work, and (3) who have workforce credentials, experience or related skills.

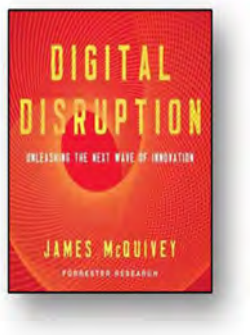
[6] McKinsey Global Institute, Independent Work: Choice, Necessity, and the Gig Economy. October 2016, https://www.mckinsey.com/~/media/mckinsey/featured%20insights/employment%20and%20growth/independent%20work%20choice%20necessity%20and%20the%20gig%20economy/independent-work-choice-necessity-and-the-gig-economy-full-report.pdf

Every nominee that enters the Jobenomics process will set up a self-employed business within days and undergo elementary business training. Setting up a small business is to make them more competitive in today's job market. Many employers prefer to "try before they buy." An incorporated self-employed individual can position themselves for subcontract or contingent work (1099) as a prelude to standard full-time work (W2).

Even if a self-employed individual never receives an income from a self-employed business, individuals can present themselves with credentials (Employer ID Number, website, business card, and skills resume) that align with the business community. In addition, Jobenomics Digital Academy & Business Generator will provide additional credentials regarding the individual's workforce aptitude, skills, and suitability tailored to the specific hiring opportunity. Jobenomics credentialing and letters of recommendation from the nominees' sponsoring organization will distinguish the individual from the masses of unemployed or new or returning workforce entrants.

Jobenomics Digital Academy & Business Generator Program

The Jobenomics Digital Academy & Business Generator will utilize the Jobenomics Community-Based Business Generator concept and process with an **initial goal of creating 100 digital startup businesses per month**. Mass producing 100 digital startups per month should not be difficult.



According to James McQuivey, a leading analyst tracking the development of digital disruption, as compared to the traditional economy, a digital economy is at least 100-times easier to create and has 10-times the number of innovators that can innovate at 1/10th the cost. [7] Digital startups are also much faster than traditional startups, which is an exciting opportunity for those that can capitalize on the momentum of the emerging digital economy. Last but not least, most digital startups provide better-paying, longer-lasting jobs than other startups, contributing more to innovation, productivity, and competitiveness.

Today, incorporating a business, building a website, and providing brochures and business cards takes only a few days. However, this activity is foundational and establishes a business mindset in the new business owner. The Digital Academy will then provide aptitude testing, skills-based training, certifications, and endorsements for this new business owner to take to market. Thus equipped, this fledgling owner can approach potential clients for task-oriented (IRS Form 1099) work or full-time (IRS Form W-2) employment.

This dual 1099/W-2 approach is unique to the Jobenomics Digital Academy & Business Generator program. A person with only a high school level degree and no certified skills will have difficulty landing a job. Since Digital Academy & Business Generator graduates will have business

[7] James McQuivey, Digital Disruption: Unleashing the Next Wave of Innovation, Figure 1-1: Digital Disruption Creates One Hundred Times the Innovation Power, Page 11.

knowledge, endorsements, and certified talents, their chances of obtaining a client interview are greatly enhanced. The dual 1099/W-2 approach gives hiring managers a "try before you buy" option and allows the new business owner to secure multiple 1099 tasks.

The Jobenomics Digital Academy & Business Generator has ways to keep the skilled-worker pipeline filled for employers and career paths to shepherd entry-level job seekers to well-paying opportunities.

- To start, every Academy graduate will have their own company (either a sole-proprietorship or an S-Corp) that will allow them to work as an independent contractor. Most companies and job agencies (like Craigslist) prefer subcontracting (1099) to hiring (W2).
- Subcontracting can lead to establishing a business (multiple 1099s) or eventually to a full-time job (W2). Both the employer and potential employee/subcontractor will get to know each other via performance rather than speculation.
- Most independent contractor companies will start as home-based, self-employed (nonemployer) establishments. This firm is ideal for part-time workers who want to top off their income or work part-time by choice. Most Millennials and Screenagers (Gen Z) prefer to combine multiple part-time jobs into a diversified full-time career.
- Finally, the Jobenomics Digital Academy & Business Generator will provide mentoring and career counseling services via lifelong applied learning and transformation mapping programs. The era when a person worked a lifetime for the same employer is long over. A successful entry-level job as a direct-care giver can lead to multiple career opportunities in healthcare and elsewhere.

The Jobenomics Digital Academy & Business Generator consists of a combined entrepreneurial and enterprise center to exploit career and business opportunities afforded by the dramatic rise in the digital economy. The primary purpose of the Digital Academy is to attract, assess, coach, train, and certify candidates in digital technologies via a lifelong applied learning and transformation mapping process.

For the underprivileged, unskilled, and poorly educated, certified skills-based training provides the most effective way to get a good job, the first step towards a meaningful career. Certified skills-based training is also preferable for entrepreneurs to start micro and nonemployer businesses in the burgeoning digital economy.

The Jobenomics Business Generator uses the Jobenomics Community-Based Business Generator process to mass-produce startup firms (e.g., around one hundred new nonemployer firms and micro-businesses per year) in underserved and under-resourced communities. This center will also include a training and computer center, startup offices, conference room, Entrepreneur Club, and cafe.

As discussed in Chapter 5, the Jobenomics Digital Academy & Business Generator will initially concentrate on the following digital economy career and business creation opportunities:

- **E-Commerce** (m-commerce, e-health, edtech, fintech, and other online B2B, B2C, B2G, C2B, and C2C occupations.)
- **Online Entertainment** (interactive entertainment industry) & **Video-Gaming** (action-adventure, shooter, sports jobs)
- **Creator Economy** (earning income from making and distributing online content occupations)
- **Gig/Contingent Workforce Economy** (independent and self-employed consultants, freelancers, artists, entertainers, contractors, independent professionals, teleworkers, flex jobs, temporary contract workers, temps, on-call workers, and day laborers)
- **Direct-Care** (healthcare, social assistance, behavioral-care, elder-care, and childcare occupations)
- **Internet of Things/Everything** (hardware design, software coding, network and systems engineering, product testing and validation, security analysis, data science, database programming, and technical documentation).

For the underprivileged, unskilled, and poorly educated, certified technical and social skills-based training provides the most effective way to get a good job, the first step towards a meaningful career. Certified skills-based training is also preferable for entrepreneurs to start micro and nonemployer businesses in the burgeoning digital economy.

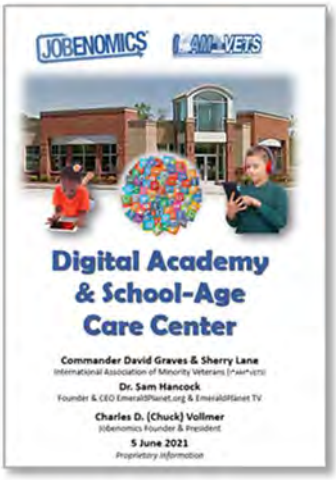
From a Jobenomics perspective, understanding the difference between education and training is fundamental to U.S. labor force development. Education is foundational (ground laying) and academically oriented. Training is specific and measured by what one can do once completed. Educational degree-oriented programs are calculated in years and are usually expensive. Training programs are tactically oriented (narrow-scoped) and relatively inexpensive. Training is often as short as weeks or months.

Education primarily deals with acquiring general knowledge, developing powers of reasoning and judgment, and preparing intellectually for mature life. Education generally involves learning theory. In the United States, there are four levels of education:

- **Pre-primary** education includes kindergarten, nursery schools, preschool programs, and child/daycare centers.
- **Primary** education refers to 1st through 9th grades.
- **Secondary** education refers to the last four years of high school (9th through 12th grade).
- **Tertiary** education, also called postsecondary, refers to academic pursuits undertaken after high school. Postsecondary undergraduate programs generally include associate and bachelor (baccalaureate) programs. Postsecondary post-baccalaureate programs typically involve master's and doctoral degrees.

Primary, secondary, and postsecondary educational programs are degree-oriented. Primary and secondary education is compulsory (required by law), whereas pre-primary and postsecondary education is not. Jobenomics believes that free pre-primary education should be available to all but not compulsory. Regarding postsecondary education, Jobenomics contends that too many youths are being encouraged to attend college for the wrong reasons. Luring them with free tuition without a reasonable path to future employment is antithetical to good labor force policy.

The Jobenomics Digital Academy will work with primary and secondary schools to provide digitally-oriented after-school and school-age care services. For example, the Jobenomics—IAMVETS team developed a Digital Academy & School-Age Care Center, a combined digital literacy and care center for Jacksonville, NC.



The primary mission of this Jacksonville Center is to prepare children (age 6-10), tweens (11-13), and eventually, teens (14-18) to thrive dramatic rise in the digital economy. Digital literacy includes technical skills plus the ability to interpret and create solutions in the digital domain. The Center's ancillary mission is to provide a safe and healthy weekend, after school, and summer school establishment that emphasizes effective communication and team-building development.

Training involves teaching a person a particular skill, knowledge, or behavior related to specific competencies. Training has targeted goals of improving an individual's capability, capacity, productivity, and performance. While some training programs are degree-oriented (such as technical colleges), most training programs (such as skills training, on-the-job training, occupational training, apprenticeships, and internships) are certificate-oriented.

Jobenomics believes that significantly more skills-based training certification programs should be offered at an early age and supplemented by government means-tested funding programs to achieve maximum attendance. Jobenomics contends that this would be a wise use of taxpayer money to link skills-based training programs to economic and employer prerequisites.

It is never too early in a child's life to develop an interest in career paths. By age 6, the internet is already a proxy for parents and school teachers. As such, today's youngsters no longer want traditional careers. A recent survey by toymaker Lego found that one-third of kids between 8 and 12 aspire to be either a vlogger or a YouTuber.

It is also never too early to start a business. Annie LeBlanc began her YouTube business at 6-years old. By age 14, she had 3.7 million fans on YouTube watching her videos featuring gymnastics, songs, and tutorials. She is also making around $80,000 per month from YouTube. Jobenomics champion in Los Angeles, Nicole Washington, incorporated her two sons, ages 6 and 8. Her son's companies (sole proprietorships) can pay for their two four-year college educations ten years later.

For people seeking careers, degree-oriented postsecondary programs are usually the best choice. Certificate-oriented skills-based training provides the most effective way to get a good job and a meaningful career for the underprivileged, unskilled, and poorly educated segments of society.

Training and learning are the opposite sides of the same coin. According to Jack Welch, former CEO and business sage, "an organization's ability to learn, and translate that learning into action rapidly, is the ultimate competitive advantage." Training involves a process to help a person learn. Learning is acquiring knowledge and skills through being taught or experienced, occurring at a specific place and time. Learning is a lifelong process. Lifelong learning is the provision or use of formal and informal learning opportunities throughout people's lives to foster the continuous development and improvement of the knowledge and skills needed for employment and personal fulfillment.

Lifelong applied learning and **transformation mapping** are two of the Jobenomics Digital Academy guiding principles, which will mass-produce startup businesses and careers in the digital domain.

Jobenomics defines lifelong applied learning as perpetual learning linked to current and emerging national, business, employment, and income opportunities. Economic and industry transformation mapping is central to the lifelong applied learning process.

Since digital literacy requires both social and technical skills, the Jobenomics lifelong applied learning process includes reskilling and upskilling technical and social programs to prepare citizens for today's workforce. Technical training teaches skills needed to design, develop, implement, maintain, support or operate a particular digital technology or related application, product, or service. Social skills training involves an individual or group tutoring for those who need to overcome social inhibition or ineffectiveness and teaches effective social interaction in specific situations (e.g., job interviews). The Jobenomic Digital Academy social skills training programs will emphasize the following:

- **Organizational skills training**: analytical thinking, innovation, active learning strategies, technology, and programming.
- **Intrapersonal skills training**: creativity, originality and initiative, critical thinking, and complex problem-solving.
- **Interpersonal team building and conflict management skills training**: emotional intelligence, assertiveness, persuasion, negotiation, leadership, and social influence.

Today's onslaught of rapid technology-induced transformation mandates a much greater linkage between lifelong learning and workforce development. Rapid change requires transformation mapping tools. These tools will include many emerging technologies to take the guesswork out of predicting the future and provide empirical data for policymaking and career decision-making.

The crucial first steps to developing a viable career pathway in the digital domain involve evaluating the student's **digital footprint**, creating a compelling **digital profile,** and publishing persuasive **digital documents, credentials, and badges**.

- A **digital footprint** collects all the traces that an individual leaves over time in the digital ecosystem. Active digital footprints include content that one voluntarily leaves online. Passive digital footprints include cookies of browsing or buying history. Prospective employers, universities, lenders, and clients often aggregate footprint data to build a profile on individuals and their behavior. The Jobenomics Digital Academy will assist all students in digital footprint awareness, positive footprint creation, and damaged footprint restoration.
    - **Digital footprint awareness** is an educational process that focuses on posting positive online content and avoiding anything harmful. Children need to learn this behavior early since finding and eliminating dangerous texts, emails, photos, and videos posted in the distant past is tricky.
    - **Positive footprint creation** involves initiating and publishing a list of distinctive activities, accomplishments, and community service activities that appeal to prospective patrons or clients.
    - **Damaged footprint restoration** entails resolving harmful online content and brand reputation management. Brand management is critical whether an individual is looking for a job or a business seeking a customer. Expunging or mitigating negative past performance issues or overcoming biases is a skill that all successful people should learn early.
- A **digital profile** includes online social media content (e.g., Facebook, Instagram, YouTube, Twitter, TikTok, Pinterest, and Snapchat) and websites. The Jobenomics Digital Academy will assist all students in developing credible profiles that will help them get a job, launch a career or start a business. Jobenomics life coaches will help students develop a digital profile **strategic plan** that includes milestones and schedules of weekly postings on social media platforms. These coaches will also help students design professional websites and timetables to keep website content fresh.
- **Digital documents** enumerate an individual's digital certifications and qualifications, including relevant full or part-time work experience, skills, education, and notable accomplishments. These documents include hard-copy and electronic biographies, resumes, and handouts.
    - Bios are usually concise one-page documents, whereas resumes are multipage living documents easily adjusted for different opportunities. Most job seekers mistakenly assume that the primary purpose of a bio or resume is to provide a work history overview. From a Jobenomics Digital Academy standpoint, a bio or resume's primary goal is to convince employers that the job seeker is worth interviewing.
    - Handouts include brochures, pamphlets, white papers, briefings, infographics, or other visual representations of information, data, or knowledge intended to present information quickly and clearly.

Collectively, digital documents constitute the marketing material for an individual or establishment.

- **Digital credentials** include certificates and badges gained through achievement or skills-based training. These credentials are equivalent to paper-based certificates, badges, and awards in the online world.

Organizations award **digital certificates** to acknowledge significant achievements in the same manner that schools issue diplomas. Switching to digital credentials enables institutions to grant their students proof of skill, individuals to substantiate their credentials, employers to evaluate employability, and clients to assess a firm's qualifications. More importantly, digital documents are easier to verify. Trusted third-party certificate authorities can provide tamper-proof digital certificates with secure authentication and connection.

Digital badges are visual representations of an accomplishment used in email signatures, personal websites, digital resumes, and social media sites such as LinkedIn, Twitter, and Facebook. When clicked, the badge enables the user to learn more about the credential, personalized certification dates, expiration dates, and the requirements to earn the badge.

Jobenomics Digital Academy digital badges will be compliant with the Open Badges standard. The Open Badges standard describes a method for packaging information about accomplishments, embedding it into portable image files as digital badges, and includes web-based validation and verification resources. Open Badges explain who earned it, who issued it, the criteria required, and in some cases, provides evidence and demonstrations of the relevant skills.

As a job seeker, digital badges show your skills and accomplishments and share your story on your website and social media. As an issuer, the Jobenomics Digital Academy can break down skills-based training into small chunks to encourage students to follow a path of lifelong applied learning and build marketable skills. The Academy will also provide Open Badges tools to create digital certificates and digital badges for aspiring digital credential developers to earn personal income or business revenue for aspiring digital credential developers.

Chapter 1. Digital Literacy & Competitiveness

America's Dual Digital Literacy Skills & Middle-Skill Jobs Crisis

Even though so-called digital natives (born in the post-1980 digital era) and digital immigrants born before the digital age and later adopted the new technology) use the internet daily, most of these digital users do not possess the skills necessary to meet today's growing demand for trained digital professionals.

Future American prosperity depends on digital literacy (the ability to interpret and create solutions in the digital domain) and competitiveness in the global digital economy. Per numerous experts (quoted below), the United States workforce is ill-equipped to perform effectively even in today's digital ecosystem.

Although most working-age adults use the internet every day, they don't necessarily have the skills needed to meet today's growing demand for trained digital professionals. Most literature on the digital technology revolution concentrates on trendsetting advanced technology. While bleeding edge technologies are critically important, the Jobenomics Digital Academy emphasizes the digital skills required by the middle-skill job market.

Per the Harvard Business School, "The lack of a properly skilled workforce is hindering the ability of American businesses to compete globally. Similarly, a lack of relevant skills hurts the average American's ability to be more productive, earn more, and improve living standards. Millions of job postings go unfilled even as millions remain unemployed or underemployed." [8]

Per the Technology Policy Institute, "the overwhelming majority of middle-skill jobs, which are positions that require some college education (such as a certificate or two-year degree), will involve digital skills." "Too many of those who could fill middle-skill jobs lack the digital skills needed." "The traditional job-training system is, for the most part, not suited to bridge these gaps." "By 2022, the economy is projected to demand 3.4 million more middle-skill workers than what the labor force can provide."[9]

Per a Capital One/Burning Glass Technologies study, "More than 8 in 10 middle-skill jobs (82%) require digital skills." "Digital middle-skill jobs represent roughly 38% of overall job postings." "The number of jobs with digital skill requirements is growing faster, and the jobs pay more and offer greater opportunity for career advancement than jobs without those requirements."[10]

[8] Havard Business School, U.S. Competitiveness, Bridge the Gap: Rebuilding America's Middle Skills, https://www.hbs.edu/competitiveness/research/Pages/middle-skills.aspx
[9] Technology Policy Institute, Senior Fellow John B. Horrigan, Adapting Jobs Programs for Today and Tomorrow, August 2020, https://www.benton.org/sites/default/files/AdaptingJobsPrograms.pdf
[10] Burning Glass Technologies, Digital Skills Gap: Research on Digital Skills, Digital Literacy, and the Future of Work. 2017, https://www.burning-glass.com/wp-content/uploads/Digital_Edge_report_2017_final.pdf

Per the National Skills Coalition, "A majority of jobs (52%) require skills training beyond a high school, but not a four-year degree. But too few of America's workers—just 43%—have had access to the skills training necessary to fill these in-demand careers. Without access to inclusive, high-quality skills training, workers are locked out of opportunities to succeed, and local businesses can't expand."[11]

The 2020 National Skills Coalition's **sobering** report on U.S. digital literacy presented the following statistics about the **dismal state** of the American workforce in the digital domain: [12]

- Across all industries, data show that 31% of workers have no or limited digital skills, 35% have achieved a baseline level of proficiency and struggle with new digital tasks, and **only 33% of workers have advanced digital skills that allow them to work in the digital domain effectively**.
- The American workforce has "fragmented knowledge" of the digital ecosystem. Most Americans are comfortable using a mobile phone to text a photo but are not familiar with operating a mouse or uploading a job application.
    - Fragmentation is particularly acute for the 23% of U.S. households that do not own a desktop or laptop computer, people that rely on smartphone-only access, or homes without broadband access.
    - While it might seem that younger workers would be uniformly digitally literate, 43% of U.S. workers aged 16 to 34 have no or limited digital skills (24% and 29%, respectively).
    - 61% of workers who score at the lowest skill level are men. At the other end of the spectrum, 54% of workers with advanced digital literacy skills are male.
    - The plurality of workers with digital skills gaps are white (44% of no and 50% of the limited skill population). On the other hand, people of color are disproportionally disadvantaged percentage-wise since they are more likely to lack broadband internet access, a desktop or laptop computer, or face difficulties obtaining technology or training to build digital literacy skills.
- Worker skill gaps are an invisible drag on productivity. People often spend considerable extra time and effort covering for their skill gaps, "muddle through" work tasks, rely on help from co-workers or family members, or delay/avoid tasks that require digital skills.
- Roughly half of the workers with limited or no digital skills have low earnings and are usually dependent on small businesses for jobs. Given that small businesses employ tens

[11] National Skills Coalition, The Skills Mismatch, https://www.nationalskillscoalition.org/skills-mismatch/

[12] National Skills Coalition, The New Landscape of Digital Literacy, How workers' uneven digital skills affect economic mobility and business competitiveness, and what policymakers can do about it, by Amanda Bergson-Shilcock, May 2020, https://www.nationalskillscoalition.org/blog/future-of-work/nearly-1-in-3-workers-lack-foundational-digital-skills-new-report-finds/ and https://www.nationalskillscoalition.org/wp-content/uploads/2020/12/05-20-2020-NSC-New-Landscape-of-Digital-Literacy.pdf

of millions of Americans and represent an essential engine for new job creation, these skill gaps are especially concerning.

- Data show that a surprising number of workers with digital skill gaps are supervising other employees. 53% of workers with limited digital skills are supervisors (20% with no and 30% with limited digital skills).
- An alarmingly high percentage of workers who lack digital literacy skills (38% with no and 43% with limited skills) work in jobs that require substantive computer skills. Much of America's critical infrastructure, businesses, and government agencies depend on high digital literacy.
- Twice as many workers with advanced digital skills receive company-provided on-the-job upskilling (training) than workers with no digital skills (58% versus 30%). Consequently, entities like the Jobenomics Digital Academy must fill the gap.

The National Skills Coalition recommends that policymakers "prioritize digital skill-building strategies that incorporate **employer** input in their design." This statement authenticates the Jobenomics lifelong applied learning and transformation mapping principles of the Digital Academy. On the other hand, employers hire workers to work instead of training. Today, large corporations do not recruit unskilled labor. Instead, they poach skilled labor from other companies or upskill their most talented employees to keep them from being hijacked by another company. Small businesses cannot afford such practices nor afford to upskill employees. Therefore, employer-based reskilling and upskilling programs are unavailable for those who need them the most.

China's Quest For Digital Economy and Digital Technology Dominance

Jobenomics contends that China's unified strategic vision and public-private partnership are more mature and competitive than the United States' business-as-usual approach. Consequently, the United States is relatively uncompetitive against China for supremacy in the emerging digital economy and each of the nine digital economy ecosystems (discussed on page 5). Several hundred trillion dollars and global economic dominance are at stake.

To compete with the Chinese digital juggernaut, U.S. policymakers and platform CEOs need to develop a digital domain strategy that enables Americans to become self-sufficient and competitive in the emerging global digital economy. Failing to do so will allow the Chinese to dominate the global digital economy and provide them with economic hegemony over the global financial system.

China's transition from an industrial (mainly manufacturing) economy to a digital economy was breathtaking. It was so rapid and unexpected that U.S. policymakers are now in a quandary about dealing with this new global heavyweight. The conundrum centers on whether China is merely a near-peer competitor or a fearsome adversary. Jobenomics asserts that it is prudent to view China equally as an economic rival and a threat.

China's Quest For All Things Digital

From a Digital Economy perspective, the country to watch is China.

China is unquestionably the global digital superpower. It is the only nation that dominates the three primary digital age thoroughfares (1) the digital economy (52% of global e-commerce), (2) digital platforms (the world's largest super-apps by daily users), and (3) digital payment systems (that facilitate most daily transactions by the 970 million Chinese smartphone users).

As part of China's Five-Year Plan, the guiding principle for the Chinese economic future, as articulated by President Xi, is termed "supply-side economic reform." Unlike the Reaganomics free-market definition of supply-side economics, the Chinese version calls for increased central planning and control of the Chinese economy, emphasizing a **digital age innovation-driven development strategy**. As stated by Xi, "the combination of the virtual (digital) economy and the real economy will bring revolutionary changes to our way of work and way of life."

According to the latest assessment from the U.S. Bureau of Economic Analysis, the digital economy accounted for 9.0% ($1.8 trillion) of U.S. gross domestic product (GDP).[13] In contrast,

[13] U.S. Bureau of Economic Analysis, New Digital Economy Estimates, By Jessica R. Nicholson, August 2020, Page 2, https://www.bea.gov/system/files/2020-08/New-Digital-Economy-Estimates-August-2020.pdf

according to a think tank associated with the Chinese Ministry of Industry and Information Technology, China's digital economy amounted to 39.4% ($6 trillion) of the country's GDP.[14]

The United States and China both have cyber commands. The U.S. Cyber Command is in charge of the Department of Defense's cyberspace operations, which, by law, are banned from domestic operations. The Cyberspace Administration of China (CAC) is involved in formulating and implementing Chinese Internet policies, including the security, illegal and unhealthy information, and censorship operations necessary for "accelerating digital development, building a network power, and a **digital China**."[15]

CAC's newest role involves regulating U.S.-listed Chinese companies. Almost all of the largest Chinese tech firms list their publically traded shares in the United States stock markets. The top 5 of 20 U.S. listed Chinese tech giants are Alibaba (a global e-commerce platform with a market capitalization of $560 billion), Baidu (an international digital technology company with a market cap of $61 billion), NIO (a multinational electric carmaker, market cap of $72 billion as of 23 July 2021), JD.com (one of the world's most prominent e-commerce firms, market cap of $113 billion), and DiDi (the world's largest ride-hailing service with 500 million users and 15 million drivers in 15 countries, market cap of $39 billion).

The digital economy is the critical driver of growth and innovation once led by U.S. platform companies. Chinese digital industries (including search, social networking, e-commerce, and fintech) have massive scale and network effects enabling them to be the most competitive globally.

China and the United States dominate the worldwide digital technology platforms. China's platform companies include major integrated platform conglomerates (Tencent, Alibaba, Ant Financial, Baidu, and Xiaomi) and scores of smaller transactional companies (e-tailing, e-commerce, entertainment, etc.). U.S. platform companies include a similar number of major integrated platform conglomerates (Apple, Google, Microsoft, Amazon, Facebook, and a dozen others).

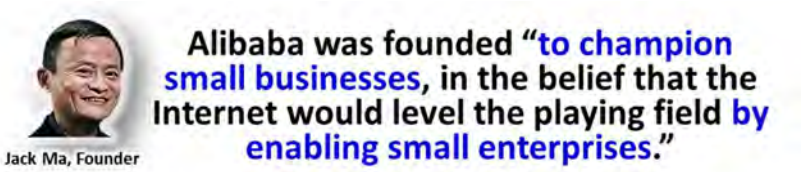
The U.S. platform companies are foundational in terms of innovation and investment. An innovation platform is a technology, product, or service that serves as a foundation on top of which other firms develop complementary technologies, products, or services. To a large extent, American foundational platforms gave rise to China's platform companies. However, China's platform company growth became integrated and innovative at an electrifying pace within a government-backed strategic framework.

[14] South China Morning Post, China's digital economy surges in 2020 amid pandemic, making up nearly 40 per cent of country's GDP, 27 April 2021, https://www.scmp.com/tech/policy/article/3131286/chinas-digital-economy-surges-2020-amid-pandemic-making-nearly-40-cent

[15] Office of the Central Cyberspace Affairs Commission, The Central Cyberspace Administration, the National Development and Reform Commission, and the Ministry of Industry and Information Technology issued the "Notice on Accelerating the Large-scale Deployment and Application of Internet Protocol Version 6 (IPv6), 23 July 2021, http://www.cac.gov.cn/2021-07/23/c_1628629122360247.htm

China's strategic framework can best be characterized by Chinese Premier Li's March 2015 address when he urged the Chinese people to "ignite the innovative drive of hundreds of millions of people." According to the Hong Kong Economic Journal, the oldest and preeminent Chinese business newspaper, Premier Li referred mainly to the "New China" driven by China's online revolution (i.e., the Digital Technology Revolution).

China's phenomenal double-digit economic growth has been overwhelmingly manufacturing and urban-centric. To replicate the urban manufacturing miracle that lifted 700 million people out of poverty, the Chinese government is pursuing an e-commerce strategy for rural economic development, emphasizing provincial micro-business creation. Chinese companies like Alibaba are central to this e-commerce strategy.



According to Jack Ma, Alibaba was founded "to **champion small businesses**." According to Jack, it is best to work for a small company when you are young. It is best to learn in a small company when it comes to learning. Once you know how a micro-business operates, you have the essential tools to launch your startup.

Alibaba's phenomenal growth was due mainly to urban customer loyalty programs, aligning e-commerce to social and entertainment networks, and financing approximately **10 million new Chinese microbusinesses**.

By investing in the rural population, roughly the same size as the urban population, Alibaba hopes to develop a substantial new customer loyalty base. Alibaba aggressively reinvested its capital reserves to build a rural e-commerce platform and acquire peripheral companies and technology. Alibaba invested billions of dollars to train locals, provide free computers, arrange startup financing, and establish a logistical supply chain to connect 100,000 villages to its e-commerce platform. In comparison, American platform company social contracts are vastly inferior.

As a result of central government planning, municipalities across China designated 129 special high-tech zones equipped with the latest DTR technologies, processes, and systems to produce innovative and entrepreneurial startups. The United States has four analogous high-tech hubs in San Francisco (Silicon Valley), New York City, Boston, and Seattle. Rather than replicating Silicon Valley or China's special high-tech zones, Jobenomics offers a highly scalable, lower-cost Digital Academy solution in every city and town across America.

Rather than being hubs for tech innovation, the Jobenomics Digital Academy & Business Generator Program focuses on digital literacy, certified skills-based training, pathways to entry-level careers in the digital domain, and startup digital technology-related businesses.

Digital literacy is the foundation upon which everything else depends. The American Library Association's Digital Literacy Taskforce definition is "the ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring cognitive and technical skills."

Over the next decade, labor demand changes require upskilling programs to transition workers from routine tasks into jobs requiring more technological and interpersonal (awareness, empathy, collaboration, leadership, conflict management/resolution, and entrepreneurship). Careers and businesses depend on communication and social skills as much as technical skills. A proper combination of so-called soft and hard skills will determine the competitiveness in the digital economy—a precept that the Chinese understand more than Americans.

The Rise Of Social Media Influence In A Socialist Market Economy

Most Americans are unaware of the transformational ramifications of social media's influence on social commerce in a socialist market economy like China. This transformation is now happening in the USA, albeit at a slower pace. The combination of influencer marketing, social media, and social shopping will be a growing and powerful force that will upend the global marketplace.

Jobenomics defines a socialist market economy and social commerce as:

- A socialist market economy is where a dominant state-owned enterprises sector exists parallel with market capitalism and private ownership.
- Social commerce is a subset of electronic commerce involving social media and online media that supports social interaction and shopping, social buying, and social selling. In other words, social commerce uses social media to drive the sales process.

As discussed in the Creator Economy segment of Chapter 5, companies pay people with large internet followings to "influence" their followers to buy or reject certain products. For example, Dwayne Johnson and Kim Kardashian (American media personalities with over 200 million Instagram followers) earn $1,015,000 per sponsored Instagram video posting.[16] These media stars can express their private views as long as they endorse the sponsored product during their video postings.

Consequently, celebrity social media influencers with millions of followers now have a financial incentive to express their political and ideological convictions views paid by a like-minded political or corporate entity. In 2021, Instagram had 1.1 billion active monthly users and 200 million business accounts.

An estimated 71% of U.S businesses claim to use Instagram to market their product and services. The average business account engagement rate is around 1%, which means for every 100 Instagram followers, a business should expect at least one engagement. Given these statistics, it is easy to deduce that influencers and companies can use social media platforms to propagandize large audiences.

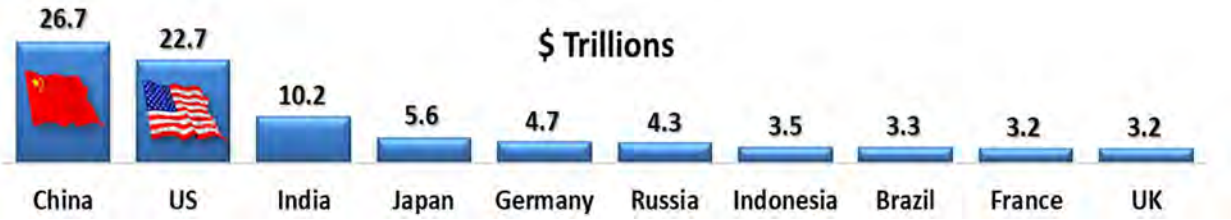
[16] GOBankingRates, Money/Entreprenuer, How Much Do Instagram Influencers Make? 2021 Top Earners, https://www.gobankingrates.com/money/entrepreneur/how-much-do-instagram-influencers-make/

Since China's ultra-dominant state-owned enterprises control the buying and selling process, harnessing the influencing power of thousands of top celebrities gives them unparalleled control over the masses and leverage over celebrities and opinion leaders.

If granted this power, America's shameful "cancel-culture" activists would use social media to ostracise and force people to accept ideologies they would otherwise reject. By adding social shopping to the mix, activists will have tools to quash or reward companies and individuals by manipulating the buying and selling process.

GDP Purchasing Power Parity, 2021

Source: International Monetary Fund [17]



China is now the world's largest economy (GDP PPP) and the largest manufacturer of commercial products. If China's leadership chose to do so, they could easily manipulate global commerce by adjusting a cancel-culture shopping spigot. American shoppers are most vulnerable to being canceled. According to the Alliance of American Manufacturing, Chinese suppliers make up to 80% of Walmart's merchandise, leaving less than 20% for American-made products.[18]

In conclusion, the power of the digital platform economy, coupled with centralized government control, can create an Orwellian economic ecosystem. If you are okay with the state-sponsored capitalist model, which has produced exceptional economic growth over the last several decades, then be prepared to accept the will of the state. On the other hand, free-market capitalism is the preferred model for maintaining freedom and privacy.

The Power Of State-Sponsored Platforms

According to Accenture's 2016 Technology Vision, "The **Platform Economy is considered one of the biggest transformations for business since the Industrial Revolution**. It's a bold claim, but the speed and scale with which today's platform businesses have developed only hint at the profound economic shifts ahead. For most businesses—whether they are "born-digital" or have an industrial heritage stretching back over many decades—the opportunities for new growth and development are **unprecedented**." [19]

[17] International Monetary Fund, IMF Datamapper, GDP, Current Prices, Purchasing Power Parity; Billions Of International Dollars, https://www.imf.org/external/datamapper/PPPGDP@WEO/OEMDC/ADVEC/WEOWORLD
[18] Alliance of American Manufacturing, FACT SHEET: Walmart's Made in America Pledge, https://www.americanmanufacturing.org/press-release/fact-sheet-walmarts-made-in-america-pledge/
[19] Accenture, Accenture Technology Vision 2016, https://www.accenture.com/t20160314T114936__w__/us-en/_acnmedia/Accenture/Omobono/TechnologyVision/pdf/IT-Tech-Trends-Technology-Vision-Exec-Summary-2016.pdf#zoom=50

Platforms are foundations that support superstructures. In the Industrial Age, platforms gave rise to product-based industrial conglomerates. The Digital Age is producing network-centric platform conglomerates. Software programs become platforms only after they achieve critical mass via mass adoption of the technology or service.

The magic of a network-centric platform is directly related to the principle of "network effects" or the bandwagon effect a satisfied consumer has on attracting other consumers. The more people who use a digitally networked platform, the more valuable the platform becomes to each user. Increased value creates an ecosystem that facilitates a positive feedback loop, encouraging more people to join the herd. The network effect also lures users of other platforms to defect and creates entry barriers for smaller and startup platform companies.

Out of a total population of 1.4 billion, China has 960 million internet users who are dependent on government-controlled networks. This dependency makes it easy for Chinese e-commerce (JD.com, Alibaba, Pinduoduo, Suning.com, Meituan-Dianping) and social media (ByteDance, Baidu, Kuaishou, Bilibili) giants to create a shopping ecosystem driven by state-sponsored network effects.

The regime in Beijing is trying to replicate its past industrial-age economic miracle of raising 700 million urbanites into the middle class by implementing a digital economy strategy to lift 700 million rural poor out of poverty. Consequently, China's platform companies are aggressively mass-producing rural e-commerce-related small businesses and jobs within a government-backed strategic framework.

To see how profound and unprecedented Accenture's 2016 platform economy predictions were, Jobenomics will borrow the following five eMarketer bar charts: Retail E-Commerce Sales In China, Social Buyers In China, Retail Social Commerce Sales In China, Livestreaming E-Commerce Sales In China, and Livestreaming Social Commerce In China. eMarketer, an international market research company, is Jobenomics' trusted digital economy marketing statistics source.

eMarketer estimates that China's retail e-commerce sales in 2020 amounted to more than half of all e-commerce globally (52.1%), which qualifies them as the **world's sole e-commerce superpower**. China's e-commerce sales will set a global historic first by exceeding over half of all domestic retail sales online by 2022. For the first time anywhere, most retail sales for an entire country will transact online.

By 2022, China's retail e-commerce sales should reach $2.9 trillion, or 50.3% of all Chinese retail sales. At 28.9%, South Korea has the second-highest rate of e-commerce sales. United States e-commerce sales amounted to only $0.8 trillion, or 14.4% of U.S. retail sales—about one-quarter the percentage of China. The projected average among Western European countries is 12.8%.
A decade ago, e-commerce's share of total retail in the U.S. and China was about equal at 5%. Since then, China's e-commerce has accelerated three times faster than the U.S. due to the power of its platform economy.

Retail E-Commerce Sales in China, 2019-2025

$ Trillions and % of Total Retail Sales

Source: eMarketer[20]

eMarketer attributes the following reasons to explain the remarkable expansion of China's platform economy:

(1) the emergence of Alibaba and JD.com's easy-to-use Chinese e-commerce platforms,

(2) innovative digital payments systems like Alibaba's Alipay and Tencent's WeChat Pay,

(3) inconvenient, non-customer-centric, and often confrontational in-person shopping culture,

(4) a nearly limitless supply of low-cost delivery services provided by China's millions of migrant laborers, and

(5) a smartphone-driven m-commerce culture.

Looking to the future, eMarketer predicts that these four activities will continue the expansion of China's digital economy: (1) social commerce, (2) WeChat Mini-Programs, (3) livestreaming, and (4) Pinduoduo will be the main drivers for steady e-commerce growth in China. U.S. decision-makers would be wise to follow these undertakings closely.

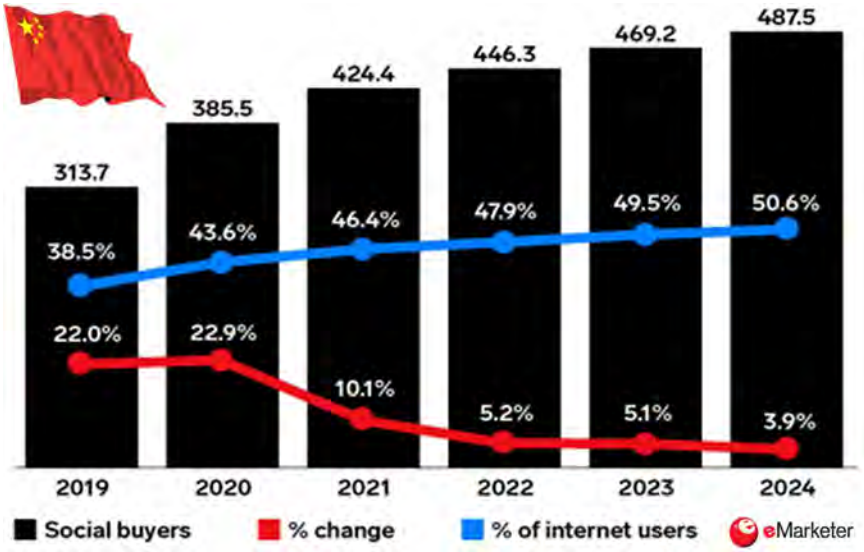
Social Commerce. Social commerce entails buying and selling products and services directly on a social platform or via linking to the retailer's product page with an immediate purchase option. In 2020, social buying represented 11.7% of e-commerce sales in China (the most advanced social commerce market globally) and 3.4% in the United States.

[20] eMarketer, China Ecommerce Forecast 2021, 6 July 2021, https://www.emarketer.com/content/china-ecommerce-forecast-2021, and May 2021, https://www.emarketer.com/content/china-ecommerce-forecast-2021?ecid=NL1014

Social Buyers In China, 2019-2024

Millions, % Change and % of Internet Users

Source: eMarketer[21]

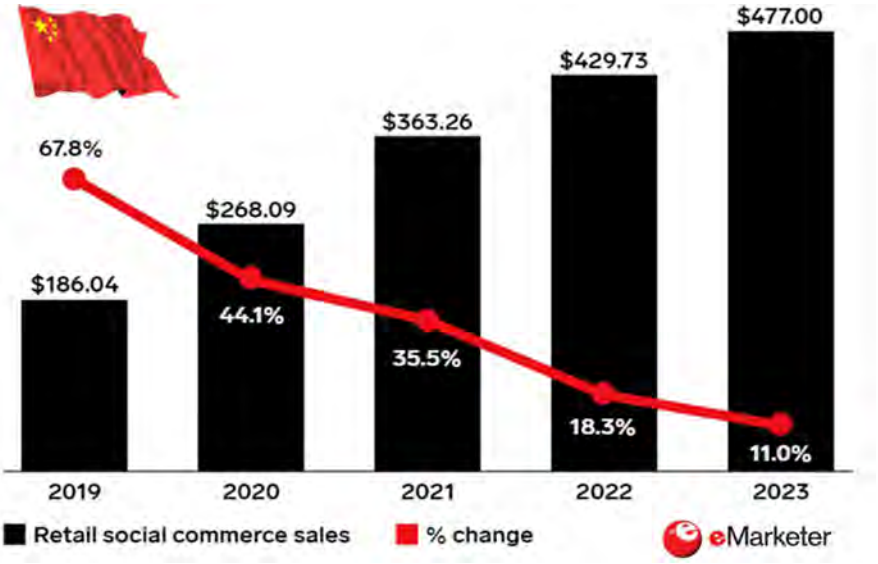


This bar graph shows the number of Chinese "social buyers" who purchased goods or services via the internet. In 2020, 385.5 million or 43.6% of Chinese internet users purchased goods or services via social networks like WeChat and Douyin (TikTok sister app). By 2024, this number should increase to 487.5 million social buyers, or 50.6% of the 960 million internet users.

Retail Social Commerce Sales In China, 2019-2025

$ Billions, % Change

Source: eMarketer[22]



[21] eMarketer, In China, Social Media Is Becoming A Social Marketplace, 10 June 2021, https://www.emarketer.com/content/china-social-media-marketplace

[22] eMarketer, As WeChat turns 10, marketers in China can leverage the ever-morphing app for Lunar New Year campaigns, 5 February 2021, https://www.emarketer.com/content/how-marketers-can-leverage-wechat-their-lunar-new-year-campaigns

In 2020, social commerce retail sales amounted to $268 billion or 11.7% of China's $2.3 trillion retail e-commerce sales. Correspondingly, in 2020, U.S. social commerce retail sales amounted to $27 billion, or one-tenth the amount of China.

WeChat & WeChat Mini Programs. WeChat is the main driver behind the explosive growth of social commerce in China. WeChat started as a simple mobile text and voice messaging communication service developed and owned by Tencent, a Chinese multinational technology conglomerate holding company founded in 1998.

Nearly 1 billion registered WeChat users live in China. Available in 17 languages, WeChat is the fifth most widely used social networking app today, with 19 million daily active users in the United States. Worldwide, users can access WeChat services free of charge. Nearly 40% of all WeChat users are over 35 years of age.

WeChat Mini Programs are sub-applications built within the WeChat platform. WeChat allows third-party companies to develop Mini Programs providing advanced features to users that can run within the WeChat application. For example, Tesla has a mini-program enabling users to locate charging stations, schedule a test drive, and share their experiences about driving a Tesla.

Via the WeChat Mini-Programs application, WeChat quickly became the home screen of choice for many of WeChat's 1.2 billion monthly active smartphone users. There were 3.9 million WeChat Mini Programs. WeChat Mini Programs has 400 million daily active users that purchased over $250 billion worth of products.

Advanced WeChat Mini Programs include features like WeChat Pay (with 900 million monthly active users and 72 million registered businesses), e-commerce, video conferencing, videos, livestreaming, interface with offline connected sites, geolocation, social media connections, notifications, numerous other features. In other words, it is a one-stop shop without having to download the application on your smartphone.

Livestreaming. Livestreaming, or simply streaming, refers to simultaneously watching, creating, and sharing online streaming media (video and audio) during recording and broadcast in real-time. Reality TV and YouTube were catalysts for the rise in global livestreaming popularity.

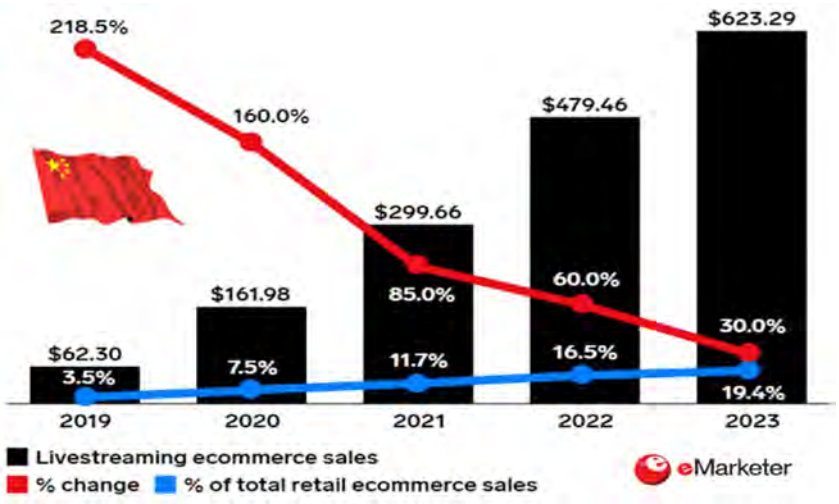
Worldwide interest accelerated via popular social media livestreaming apps (e.g., Facebook Live, Instagram Live Stories, Twitch TV, and Tik Tok) and video conferencing apps (e.g., Zoom, Facetime, Google Hangout, and Skype). Livestreaming is particularly appealing to youth, allowing them to create, present, and interact with friends.

Per eMarketer, Chinese livestreaming e-commerce is an amalgamation of the Home Shopping Network (HSN), game shows, talk shows, and auctions, which has taken China by storm. If China's e-commerce livestreamers were their own country, they would be the third-largest retail e-commerce market in the world.

Livestreaming E-Commerce Sales in China, 2019-2023

Billions, % Change and % of Internet Users

Source: eMarketer[23] [24]

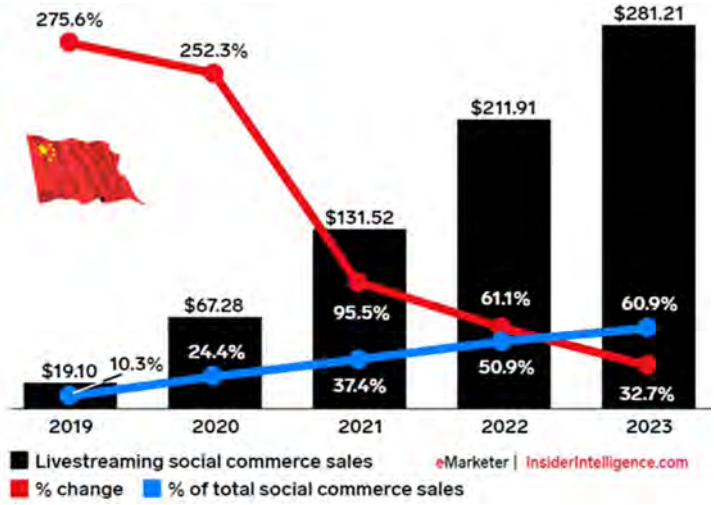


Livestreaming is an integral part of China's e-commerce, generating $300 billion in China in 2021. Livestreaming grew 85% during the pandemic and now accounts for about 12% of China's total retail sales. In April 2021, for instance, Alibaba revealed that it generated $61.7 billion in gross merchandise value in 2020 on its Taobao livestreaming platform for merchants and doubled the daily number of active platform users from the prior year.

Livestreaming Social Commerce in China, 2019-2023

Billions, % Change and % of Total Social Commerce Sales

Source: eMarketer[25]



[23] eMarketer Retail, The evolution of livestreaming shopping in China and what it means on a global scale, 20 June 2021, https://www.emarketer.com/content/evolution-of-livestreaming-shopping-china-what-means-on-global-scale?ecid=NL1014

[24] eMarketer, How important will livestreaming be for social commerce in 2021?, 1 July 2021, https://www.emarketer.com/content/how-important-will-livestreaming-social-commerce-2021?ecid=NL1016

[25] eMarketer, How important will livestreaming be for social commerce in 2021?, 1 July 2021, https://www.emarketer.com/content/how-important-will-livestreaming-social-commerce-2021?ecid=NL1016

Between 2018 and 2020, Chinese livestreaming grew at an incredible annual rate of over 250%. In 2020, China's livestreaming e-commerce sales revenue rose to $67.3 billion, representing 42% of all livestreaming e-commerce sales ($162.0 billion shown on the previous bar chart). As this chart indicates, the appetite for livestreaming social shopping is skyrocketing in China. This trend has not gone unnoticed in the United States.

Nearly all major U.S. social media networks follow China's lead by introducing livestreaming to boost social buying on U.S. e-commerce platforms. Per eMarketer, some of the latest U.S. developments include:

- **Walmart/TikTok.** In December 2020, Walmart partnered with TikTok for a live shopping event, followed by a second in March 2021. Walmart indicated that it received seven times more views than expected and a 25% increase in its TikTok follower count.
- **Instagram.** During the height of the pandemic (May 2020), Instagram introduced live shopping capabilities in its Instagram Checkout in-app payment system.
- **Facebook.** In May 2021, Facebook introduced "Live Shopping Fridays," where brands can showcase products through Facebook's live shopping feature.
- **Pinterest.** In May 2021, this platform hosted its first in-app livestreaming event with an initial test group of 21 creators as hosts.

From a Jobenomics standpoint, Chinese livestreaming e-commerce is a brilliantly innovative and creatively destructive phenomenon. It is a brilliant new model for the emerging global economy that innovatively weaves together disparate elements of the digital ecosystem, including search, information, entertainment, payment, and lending systems. In an Orwellian sense, it is creatively destructive, blending state-sponsored capitalism with influencer marketing to upend free and open societies.

Today corporations pay vast sums of money to top influencer marketing celebrities to promote company products to their followers. Combined with authoritarian leaders and today's call-out culture (aka cancel culture), livestreaming e-commerce can be a weapon to ostracise, boycott, or block products, services, ideologies, individuals, companies, and nations. At 12% of total retail sales, China's livestreaming e-commerce is the newest weapon in China's hegemonic arsenal.

Pinduoduo. With 800 million active monthly buyers, Pinduoduo is the third-largest and fastest-growing e-commerce player behind Alibaba and JD.com. Unlike its rivals, which concentrate on large urban centers, Pinduoduo's customers usually reside in small cities and rural communities. As a result of their rural penetration, Pinduoduo is China's leading agriculture-focused technology platform that directly connects farmers and distributors with consumers through its interactive shopping experience. Pinduoduo also has implemented state-of-the-art logistics information systems and agri-focused infrastructure solutions to modernize underserved and under-resourced agrarian communities.

Pinduoduo employs a unique **"social shopping and group buying"** function that encourages users to share links with friends and family to purchase merchandise at a discount collectively. The more that people buy together entitles the group to a steeper reduction. Each item has a minimum number of buyers required to complete the purchase within 24 hours. If not met, Pinduoduo cancels the transaction and refunds the money.

Rural U.S. farmers could use this kind of collective buying power application and logistics management system. Rural communities in the United States, Canadian, Colombia, and West Africa are currently considering Jobenomics's collaborative agricultural programs.

In summary, U.S. policymakers, pundits, and opinion leaders need to understand the power of state-sponsored platforms that the Chinese use to grow their digital economy. Decision-makers also must obtain a high level of comprehension of how the Chinese are applying a perfect storm of new digital technologies, systems, processes, and services that are:

- Transforming the Chinese economy,
- Revamping existing China's institutions and governance, and
- Instituting radically new forms of endeavor, work, and business.

As the Chinese have demonstrated to the world, the budding Digital Technology Revolution (DTR) is brilliantly innovative and creatively disruptive. The more creative the DTR becomes, the more destructive it will be, especially for China's growing sphere of influence in the digital domain.

Few people understand that China's Belt and Road Initiative's global infrastructure development strategy is more about building a sinocentric digital network than a maritime and overland transportation network. **As this document discusses in detail**, the return-on-investment of the emerging digital economy is much more lucrative than the old industrial economy, which the Chinese already dominate. If the Chinese master the network-centric platform domain, the ensuing network effects will quickly lead the rest of the world to their door.

The DTR can create millions of new U.S. small businesses and tens of millions of jobs with the proper focus and leadership. Left unattended, unstructured, and unplanned, the DTR will render half of the U.S. workforce obsolete. Countries with a forward-looking national DTR strategy will garnish the bulk of the global digital economy's newly emerging jobs and businesses.

Near-Peer Competitors Versus Adversaries?

China's transition from an industrial (mainly manufacturing) economy to a digital economy was breathtaking. It was so rapid and unexpected that U.S. policymakers now have difficulty dealing with this juggernaut. The conundrum centers on whether China is merely a near-peer competitor or a fearsome adversary.

Jobenomics asserts that it is prudent to view China equally as an economic rival and a threat. Regarding China as a threat, any military action will likely be regional than global. Beijing is far

more likely to use economic hegemony than military action to confront the United States. China's quest for digital supremacy (i.e., digital economy supremacy, cyber intrusion, and fintech manipulation) should be the primary concern for America and other nations.

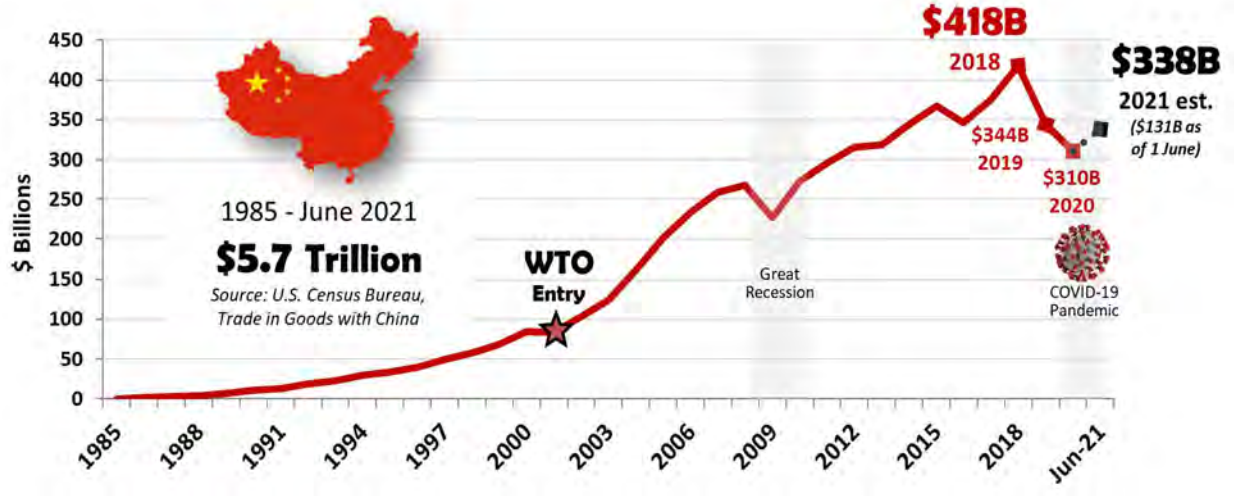
Today, China leads the entire world in most things digital. They procured the digital technologies they did not invent either legally or illegally from the Western world. The West turned a blind eye toward most illicit activities such as currency manipulation, one-way trade practices (quotas, tariffs, and barriers), predatory loans, forced technology transfer, espionage, hacking, and intellectual property theft.

In Hindsight. The West believed that China's induction into the World Trade Organization (WTO) in 2001 would encourage this communist nation to conform to the Organization's commitment to a free and open market economy. Instead of abiding by the organizational trade rules between countries, Beijing changed the establishment itself.

For the most part, Presidents Carter, Reagan, Bush, Clinton, Bush, and Obama chose not to disciple China for its infractions of international trade rules in hopes of a change of heart and belief a carrot-and-stick approach would prevail. Unfortunately, China did not take the bait and became even more adventuresome due to its success in"state-sponsored capitalism." President Trump, the consummate deal maker, decided to implement a big-stick approach to rein in China. This new tactic shocked China and many of the WTO's status-quo lovers.

U.S. Trade In Goods Deficit With China, 1985-June 2021

Source: U.S. Census Bureau, [26]



From 1 January 1985 to 1 June 2021, the **U.S. goods trade deficit with China amounted to a staggering $5.7 trillion** (not adjusted for inflation). China did not only exploit the U.S. trade deficit but also U.S. intellectual property.

[26] U.S. Census Bureau, Foreign Trade, Trade in Goods With China, retrieved 7 July 2021, https://www.census.gov/foreign-trade/balance/c5700.html

The U.S. Commission on the Theft of American Intellectual Property states that **intellectual property theft** (cyber theft, counterfeit goods, software piracy, and trade secrets theft) **costs the American economy as much as $600 billion a year, with the vast majority attributed to the Chinese government.** In addition to annual financial losses, intellectual property theft causes tens of millions fewer U.S. jobs, GDP suppression, and priceless loss of the benefits of American R&D, innovation, and know-how.[27]

The infusion of $5.7 trillion of U.S. financial capital and the untold trillions of IP-theft into the Chinese economy raised China's Gross National Income (GNI) per capita.

The World Bank reports that Chinese personal income rose 37-fold from $290 in 1987 to $10,610 in 2020.[28] The trade imbalance also created a fantastic amount of wealthy Chinese. According to Forbes, China now has 398 billionaires (40% higher than the Top-10 European Union countries combined) collectively worth $1.2 trillion.[29]

While this trade imbalance helped raise hundreds of millions of Chinese out of poverty, it eroded much of the U.S. manufacturing base. Over the last 3½ decades, the United States lost 5,691,000 manufacturing jobs due to outsourcing, automation, and foreign competition--that the USA helped create. [30]

The U.S. trade deficit was not entirely China's fault. American manufacturers were more than pleased to outsource domestic labor to eager foreign workers who worked for a fraction of the cost. Additionally, American consumers became addicted to inexpensive consumer products, giving rise to big-box stores at the expense of American small businesses. Having the support of U.S. big businesses, Wall Street (which liked appreciating stock prices), and the American public, U.S. policymakers were free to allow the Chinese to accept all the work they could handle.

The red line on the bar chart shows that the peak deficit year was $418 billion in 2018. Trump's austere trade policies reduced the Chinese goods deficit to $310 billion by 2020, a 35% decrease. The Biden Administration's return to a more conventional diplomatic approach and a quasi-post-pandemic economic resurgence reversed the downward trend.

During the Trump Administration, trade was headline news. Now trade story receives little coverage, whether it is good or bad.

[27] The Commission on the Theft of American Intellectual Property, http://www.ipcommission.org/
[28] World Bank, GNI per capita, Atlas method (current US$), China 1985-2020, retrieved 7 July 2021, https://data.worldbank.org/indicator/NY.GNP.PCAP.CD?end=2020&locations=CN-US&start=1985
[29] Forbes, Forbes World's Billionaires List, The Countries With The Most Billionaires, 2020, https://www.forbes.com/sites/jonathanponciano/2020/04/08/the-countries-with-the-most-billionaires-in-2020/?sh=6d85384e4429
[30] Bureau of Labor Statistics, Establishment Data, Table B-1 Employees on nonfarm payrolls, Manufacturing, retrieved 8 July 2021, https://www.bls.gov/webapps/legacy/cesbtab1.htm

First, the bad news is that the U.S. trade deficit is getting worse. The trade deficit in goods reached a historic high in 2020 of $905 billion (98% related to manufacturing). The first 5-months in 2021 are already 27% higher than the same period in 2020, which will be economically harmful if this trend persists. The primary reasons for the surging deficit include the overvaluation of the U.S. dollar (making U.S. exports more expensive), inconsistent trade actions (weak WTO compliance), and the combined effects of the ongoing global pandemic.

Now for the good news, of the Top-15 U.S. deficit trading partners, China's goods deficit dropped from 50% in 2015 to a low of 33% as of 1 June 2021. In other words, China and the United States could be on the path to a mutually beneficial trade relationship. Normalizing US-China trade would greatly benefit the global economy and humankind, especially the 700 million souls worldwide who live in extreme poverty ($1.90 or less per day).

Global GDP is not a zero-sum game where one country's gain is dependent on another nation's loss. There is room at the top for multiple economic superpowers.

Before becoming President, Xi Jinping unequivocally stated that he was willing to accept power-sharing and economic interdependence with the United States. Per Vice President Xi during his 2015 state visit to the USA, "As economic globalization gathers momentum, China and the United States have become highly interdependent economically. Such economic relations would not enjoy sustained, rapid growth if they were not based on mutual benefit or if they failed to deliver great benefits to the United States."[31] Hopefully, he feels the same today.

At the turn of the 21st Century, global GDP was $34 trillion in 2000. By the end of 2020, it zoomed to $85 trillion, a 174% gain or an increase of $51 trillion.[32] Wouldn't it be wonderful if multiple economic superpowers (e.g., USA, China, EU, India, etc.) could increase global GDP to an additional $51 trillion per year over the next two decades as the world did over the last two decades? Properly structured and globally applied, this new capital could transform this planet.

Looking Forward. Americans tend to focus on China's well-known exceptional growth story and assume that it will continue unchecked. However, success brings a host of new challenges.

Beijing is wrestling with many contentious issues, including a restive new middle class, vast rural-urban income inequality, rising nationalism, corruption, local unrest, the future of the Chinese Communist party, health/social safety net issues, environmental reforms, human rights, and religious freedom issues. These issues grow in importance as China transitions from a rising nation to a superpower.

Rapid aging is perhaps China's most significant challenge. Rapid aging drains resources (human and fiscal) and future economic vitality. The workforce and government will have to support

[31] BrainyQuote.com, Xi Jinping Quotes, 2021. https://www.brainyquote.com/quotes/xi_jinping_487314.
[32] World Bank, World GDP (current US$s), https://data.worldbank.org/indicator/NY.GDP.MKTP.CD

increasing numbers of economically inactive older adults, many with age-related infirmities and disabilities.

Rapid aging and low fertility rates go hand in hand. If the number of births declines faster than people die, the percentage of older people increases, shrinking the labor force.

- According to the 2020 Chinese Census of the People's Republic of China, China recorded only 12 million births in 2020 (0.8% out of a total population of 1,443,497,378[33]), the fourth consecutive year of declining births.

  Per the Chinese Census, the fertility rate of Chinese women of childbearing age was 1.3, well below the 2.1 children per woman needed to sustain population growth.

  Since 1970, China's child dependency ratio (percent of children aged 14 and below per 100 persons of working age) dropped precipitously from 72.4% to 25.2% in 2020.[34]

  In addition to the one-child policy, the decline in China's fertility rate is due to changing lifestyles, people marrying later in life or staying single, and the economic insecurity of the younger generation.

- On the other side of the birth/death equation, China's life expectancy is rapidly increasing (44 years in 1960 versus 77 in 2019), and age-related chronic diseases (e.g., cardiovascular, dementia, diabetes, etc.) are accelerating.

- Many of these diseases do not occur until later in life. For example, for most people, Alzheimer's symptoms first appear in their mid-60s. Consequently, Chinese healthcare, elder-care, and retirement cost will soar.

  In 2020, China's Old-age dependency ratio (percent of individuals aged 65 and over per 100 persons of working age) was 17%, the worldwide average. However, due to the now abolished one-child policy and the low rate of immigration, China's population is aging faster than other countries other than South Korea.

Jobenomics created "rapid aging" tables on the following page from the Organisation for Economic Co-operation and Development (OECD) database. Founded in 1961, OECD is an intergovernmental economic organization with thirty-eight member countries and five partner countries (China).

[33] National Bureau of Statistics of China, Seventh National Population Census, 11 May 2021, http://www.stats.gov.cn/english/PressRelease/202105/t20210510_1817187.html

[34] Statista, Children and old-age dependency ratio in China from 1950 to 2010 with forecasts until 2100, https://www.statista.com/statistics/251535/child-and-old-age-dependency-ratio-in-china/

Number Of Elderly (65+) Per 100 WorkingAge Adult (20-64)

Source: OEDC, [35]

	2015		2060 Est.		Growth Rate	
1	**Japan**	**48%**	**South Korea**	**89%**	**South Korea**	**364%**
2	Italy	37%	**Japan**	**80%**	**China**	**316%**
3	Germany	35%	Italy	67%	Indonesia	217%
4	European Union	32%	**China**	**60%**	Mexico	187%
5	United Kingdom	30%	Germany	60%	India	179%
6	Canada	26%	European Union	57%	Russia	132%
7	**United States**	**25%**	United Kingdom	51%	Canada	82%
8	Russia	21%	Russia	50%	European Union	81%
9	**South Korea**	**19%**	Canada	47%	**United States**	**72%**
10	**China**	**14%**	**United States**	**43%**	**Japan**	**68%**

In 2015, Japan was the most elderly country globally. For every 100 working-age adults (20-64), Japan has 48 people elderly (65 and over). In the United States, South Korea, and China, the percentages of elderly to working-age adults were 25%, 19%, and 14%, respectively. By 2060, the OECD projects that South Korea will have the highest percentage (89%), followed by Japan (80%), Italy (60%), and China (60%). While 2060 is a long way off, the Growth Rate table shows alarming growth rates for South Korea (364%) and China (316%) over the 45 years from 2015 to 2060. The U.S. growth rate (72%) is much more manageable.

Japan is China's economic model for aging. Japan and China share many cultural similarities and experienced explosive economic growth. With the world's longest life expectancy and lowest fertility rates, the Japanese are experiencing severe labor shortages. China is acting now to mitigate workforce challenges and deal with a rapidly aging population.

Like the Japanese, a central tenet of Chinese culture is filial piety. Filial piety (Chinese character 孝, xiào) entails strong loyalty and deference to one's parents and ancestors, by extension, to one's country and its leaders.

Like Japan, China has too few workers to support aging adults. Unlike Japan, China's one-child policy is responsible for its labor force shortage.

Enacted in 1979, the Chinese State Council designed the one-child policy to reduce the number of people to allow the country to raise living standards. Given the Chinese economic miracle that raised the standard of living for hundreds of millions of Chinese, this one-child policy worked as designed to focus childbearing-age adults on building the nation rather than having large families.

[35] Organisation for Economic Co-operation and Development (OEDC), Ageing and demographic change: Fiscal challenges and inclusive growth in ageing societies, https://www.oecd.org/economy/ageing-inclusive-growth/

In 2013, China passed a law making it mandatory for children to visit their aging parents. In many ways, China needed this legislation to care for the vast number of rural aging parents who were rendered childless due to the mass migration of young people to urban areas to seek their fortunes. Modernization and acceptance of Western ways have made Chinese youth less filial and pious for their parents and Chinese elders and towards Beijing and the Party.

China scrapped its decades-old one-child policy in October 2015 to allow families to have two children, but Chinese Millennials continued to focus on their careers. The high costs of urban living and the limited job protection for women further deterred many Chinese couples from either having more children or postponing having them. Furthermore, many urban women are educated and have promising careers, making it harder to take on caregiving duties. In response, in May 2021, Beijing upped the limit to three children and introduced a host of new programs to incentivize childbearing.

Beijing is also offering a host of new programs for the elderly. These programs involve digital technology and digital economy applications to help the elderly continue working. China started developing a long-term care industry with integrated direct-care programs (elder-care, childcare, healthcare, social assistance, and behavioral care). For example, Beijing encourages elder-care facilities to adopt digital technology, including telemedicine, sensors, and monitoring devices, to keep seniors safe and entertained.

As discussed earlier, Beijing enlisted tech giants (including U.S. tech giants like Apple and Microsoft) to build digital networks in millions of rural Chinese towns. By creating a viable rural digital economy, Beijing hopes to reverse the migration from crowded metropolitan areas back to the countryside where the cost of living and workers can work virtually.

An Orwellian State?

George Orwell's dystopian novel, *Nineteen Eighty-Four,* published shortly after WWII, characterized a future society ruled by autocrats (Big Brothers), with omnipresent electronic surveillance (digital devices) and propaganda by thought police (influence marketers).

Paraphrasing a special report on China by The Economist, Chinese authoritarian rule has shown great skill in bending the technology to its purposes, enabling it to control its society and set an example for other repressive regimes. The party-state has deployed an army of cyber-police, digital engineers and developers, web monitors, and paid online propagandists to watch, filter, censor, and guide Chinese internet users. It also works hand-in-hand with trusted domestic internet companies such as Baidu (a search engine), Tencent (an internet-services portal), Renren (China's leading clone of Facebook), and Sina (an online media company that includes Weibo, a Twitter-like microblogging service). Having blocked U.S. microblogging services, like Facebook and Twitter, this Orwelling state's microbloggers penetrate almost every internet-connected home in China.[36]

[36] The Economist, Giant Cage, 6 April 2013, https://www.economist.com/special-report/2013/04/06/a-giant-cage

The Economist published this report in April 2013, and the Chinese have advanced their digital control and dominance by orders of magnitude since then. Their latest (July 2021) special report on China discusses the Chinese Communist Party at 100 years old and their plans to revamp the Party for the next 100 years. Central to their strategy for the next century is to embed party officials in private firms, emphasizing digital companies and entrepreneurial startups. Since President Xi assumed office in March 2013, the proportion of embedded party organizations has risen from 50% to more than 70%. President Xi wants complete coverage, with no excuses for non-compliance. To comply with this order, the regime in Beijing now requires party offices in every multi-occupant commercial property in China. [37]

In conclusion, Jobenomics asserts that it is prudent to view China equally as an economic rival and an economic threat. The way to reduce the threat level is to encourage President Xi to pursue interdependent and mutually beneficial cooperation with the United States (as he stated during his 2015 state visit) is to make the digital economy borderless. The digital economy is not a zero-sum game where China's gain is dependent on U.S. loss. There is room at the top for two digital economy maestros that can jointly orchestrate a global renaissance.

The maestro of diplomacy, Henry Kissinger, once told this author that the secret to maintaining king of the mountain is encouraging people to hold you up rather than drag you down. Being a superpower is like being a mountain king. China and the United States should lift each other for mutual benefit and the global community. Failure to do so will lead to a bipolar world like during the Cold War era. The emerging digital economy presents a unique but fleeting opportunity for a new and productive détente between the United States and China.

Chairman Mao & President Nixon 1972

[37] The Economist, Special Report, The Chinese Communist Party, A hundred years of evolution, 26 June 2021, https://www.economist.com/special-reports and https://www.economist.com/special-report/2021/06/23/the-party-is-eager-to-expand-its-influence-within-business

Chapter 2. Emerging Digital Economy

What Is A Digital Economy?

From a Jobenomics perspective, these are the nine economic communities that define the digital economy. The **E/M Economy** consists of electronic and mobile commerce. The **On-Demand Economy** is a business model where consumer demand is satisfied by near real-time provisioning of goods and services. The **Sharing Economy** is a peer-to-peer, access-driven business model characterized by individuals' ability to share or trade (goods, knowledge, money, time, skills, content, etc.) rather than buy or own. The **App/Bot/AI Economy** refers to the range of economic activity surrounding intelligent web-based applications. Apps (applications) are types of software that can be installed and run on a computer, tablet, smartphone, or another electronic device. A bot is an interactive, artificial intelligence-driven software application that runs automated tasks or simulates a conversation via a networked device. Artificial intelligence (AI) is the intelligence exhibited by machines or software that can do things typically done by people. The **Platform Economy** encompasses networked-enabled social, business, and government activities. The **Creator Economy** consists of independent video content creators earning income from making and distributing online content. A **Gig/Contingent Workforce Economy** is an environment where temporary positions are common and organizations contract with independent workers for short-term engagements. A **Data-Driven Economy** involves accessing and exploiting information and knowledge in big-data pools to maximize operational efficiencies and reduce costs. The **Internet of Everything** brings together the economy, people, processes, data, and things to make networked connections more relevant and valuable than ever before—turning information into actions that create new capabilities, richer experiences, and unprecedented economic opportunities for startup businesses and careers.

The global digital economy will be shaped mainly by the digital generation and the ideology of their mentors. Generation Z, called Screenagers by Jobenomics due to the excessive amount of online screen time youngsters absorb, are true digital natives. These digital natives will shepherd America into the Gig/Contingent Workforce Economy in the overall Digital Economy. Currently voting age and younger, Generation Z will soon be the fastest-growing segment of the U.S. labor force, standing aside their digital compatriots, the Millennials, who became the largest generation in the workforce in 2015.

Screenagers and Millennials generally prefer contingent work over traditional full-time occupations. 61% of Millennials still at "regular" jobs want to quit within two years and be entirely independent. 72% of surveyed Screenagers wish to start their own business.[38] While

[38] Ryan Jenkins Next Generation Catalyst, 7 Emerging Millennial and Generation Z Trends For 2015, http://ryan-jenkins.com/2015/02/05/7-emerging-millennial-and-generation-z-trends-for-2015/ , and Global Messaging, Beyond Facebook: How to Market to a New Generation, https://www.globalmessaging.co.uk/index.php/beyond-facebook-market-new-generation/

much of this is wishful thinking, the NTR will provide many of these Millennials and Screenagers with business and traditional and contingent employment opportunities to make their wishes come true.

Rather than forcing new labor force entrants into the legacy labor pool, it is prudent to seek solutions that recognize the realities of changing workforce attitudes and help newcomers productively pursue their self-interests to obtain self-sufficient lifestyles. As advocated by Adam Smith, the forefather of today's classical free-market economy, when individuals pursue their self-interest, they indirectly promote the greater good of society by producing vital goods, services, and tax revenues.

Differences Between The Traditional And Digital Economies

The transformative power of the Digital Economy is revolutionary. What took centuries to transform in the Agricultural Age and decades in the Industrial Age now takes years in the Digital Age. Computing power increased 400,000-fold since the advent of the first microprocessor in 1971. Today, half of the world's population carries a smartphone with the power of a 1980s room-size supercomputer.

The digital economy's orientation differs from technology, governance, business, and investment in the traditional economy. These differences will become more profound as more digital technologies, processes, and systems become part of the American way of life.

Differences between the Old and New Economies

	Traditional Economy Orientation	Digital Economy Orientation
Technology	Analog	Digital
	Industrial	Informational
	Tangible	Conceptual
	Labor-Intensive	Knowledge-Intensive
Governance	Centralized	Decentralized
	Ordered/Structured	Collaborative/Freewheeling
	Hierarchical	Flat
	Bureaucratic	Laissez-faire
Business	Conglomerated	Independent
	Mass-Produced	Custom-Made
	Long Timelines	Short Timelines
	Relationship-Focused	Task-Focused
Finance	Owned	Shared
	Banking	Shadow-Banking
	Fiat Currencies	Cryptocurrencies
	Asset-Based	Derivatives

From a technology standpoint, as shown above, digital, informational, conceptual, and knowledge-intensive goods and services are supplanting analog, industrial, tangible, and labor-intensive goods, and services.

The McKinsey Global Institute (MGI) lists twelve disruptive DTR technologies that will affect billions of consumers and workers and inject trillions of dollars of economic activity into the Digital Economy by 2025. The total economic impact of these disruptive technologies would be $124 trillion. [39]

From a business perspective, *c*onglomerated relationship-focused businesses with long timelines and a mass-production orientation switch to more independent task-oriented business orientations with shorter timelines and custom-made products and services.

According to James McQuivey, **a digital economy startup is at least 100-times easier to create and has 10-times the number of innovators that can innovate at 1/10th the cost of the traditional economy**. [40]

Digital startups are much faster than conventional startups, which is an exciting opportunity for those that can capitalize on the momentum of the emerging digital economy. More importantly, digital startups provide better-paying, longer-lasting jobs than other startups and contribute more to innovation, productivity, and competitiveness.

From a governance viewpoint, centralized, ordered, structured, hierarchical, and bureaucratic structures give way to decentralized, collaborative, freewheeling, flat, and laissez-faire structures.

The workplace in the digital economy will be a tailorable mixture between mobile and fixed, work and play, and office and home. Network and digital technology will allow task-oriented work by remote teams to rapidly form to accomplish a given task and quickly reform for the next tasking, whether it is for the same employer or another. Via digital technology, home offices will replace corporate offices. Decentralized rural workplaces with flexible hours will replace centralized urban workplaces with fixed schedules. Artificial intelligence agents that will "work" side by side with humans.

From a financial frame of reference, hybrid forms of sharing, shadow banking, and cryptocurrencies are upending traditional ownership, banking, fiat currencies, and asset-based equities.

Historically, what one owns defines the person, whether a home, a car or other personal property, all of which determine a person's "net worth" in today's consumption-based economy. In a shared economy, ownership consists of sharing resources and collaborative consumption. While this economic model may seem to be a fad instituted by Millennials (Generation Y) and

[39] McKinsey Global Institute, Disruptive Technologies: Advances That Will Transform Life, Business and the Global Economy, https://www.mckinsey.com/business-functions/mckinsey-digital/our-insights/disruptive-technologies
[40] James McQuivey, Digital Disruption: Unleashing the Next Wave of Innovation, Figure 1-1: Digital Disruption Creates One Hundred Times the Innovation Power, Page 11.

Screenagers (Generation Z), it is increasingly being accepted by other generations, as evidenced by shared mobility (e.g., Uber and Lyft) and shared accommodations (e.g., Airbnb).

Nonbank financial institutions, called shadow banks, grow faster than traditional banking systems. Today's banks (commercial banks, investment banks, and central banks) are subject to financial oversight, regulation, and underwriting (e.g., FDIC insurance). Shadow banks are generally not subject to regulatory oversight of traditional financial intermediaries. Examples of shadow banks include hedge funds, private equity funds, payday lenders, mortgage lenders, money market funds, and derivatives. Investopedia estimates the derivatives market at $1.2 quadrillion ($1,200 trillion), equating to 10-times global GDP. Even more exotic, the digital economy is ushering in cryptocurrencies that could potentially upend national fiat currencies that underpin the international banking system.

Nine Ecosystems Define The Digital Economy

From a Jobenomics perspective, nine ecosystems define the digital economy.

- The **E/M Economy** consists of electronic and mobile commerce transforming economies, government, businesses, and society via emerging network and digital technology, systems, processes, and services. The pandemic accelerated electronic retail sales (an e-commerce subcategory) a decade ahead of expectations and accounted for over $860 billion in 2020, up 44% from 2019. 80% of smartphone users engage in mobile commerce to make online purchases.

- The **On-Demand Economy** is a business model where consumer demand is satisfied by near real-time provisioning of goods and services built on top of a technology infrastructure that brings the online and offline world together either instantaneously or scheduled. Globally, the on-demand economy should exceed $1 trillion in 2021, accelerated by increased usage (pandemic related) of online entertainment, next-day delivery, and meals-to-go.

- The **Sharing Economy** is a peer-to-peer, access-driven business model characterized by the ability to share or trade (goods, knowledge, money, time, skills, content, etc.) rather than buy or own. 86 million Americans used the sharing economy so far in 2021, with 2,000% growth over the next decade.

- The **App/Bot/AI Economy** refers to the range of economic activity surrounding intelligent web-based applications. Apps (applications) are the digital interface through which we live, work, play, and the primary way we engage with media, brands, and ultimately with each other. A bot, also known as a web robot, an internet chatbot, or simply bot, is an interactive, artificial intelligence-driven software application that runs automated tasks or simulates a conversation to deliver text-, voice- or video-based information via a networked device. Artificial intelligence (AI) is the intelligence exhibited by machines or software that can do things typically done by people. AI could contribute up to $15.7 trillion to the global economy and 14.5% of U.S. GDP ($3.7 trillion) by 2030.

- The **Platform Economy** encompasses DTR-enabled social, business, and government activities. A platform (network) business model creates value by facilitating exchanges between interdependent groups, usually consumers and producers. Retail (pipe model) stores are giving way to e-retailing (platform model). For example, healthcare is now emphasizing outpatient and telemedicine (platform) services in addition to inpatient (pipe) care. The Platform Economy is also a network platform business model where mega-technology corporations exploit network effects to garnish greater and greater influence and control of significant segments of society and the global economy. The top-5 U.S. tech firms (Apple, Microsoft, Amazon, Alphabet/Google, and Facebook) market value is over $8.4 trillion, around 300% more than India's economy, which supports 1.4 billion people.

- **Creator Economy** entails earning income from making and distributing online content. With the advent of streaming video, online entertainment, social media, and video sharing, new and fresh forms of content are in high demand. New content producers have skyrocketed with new smartphone video technology and inexpensive and high-quality mobile action cameras (e.g., GoPro). The 294 million U.S. smartphone users are novice (unpaid) content creators if they produce a video and post it on social media. The fledgling Creator Economy (paid) consists of more than 50 million **independent** content creators, curators, and community builders, including social media influencers, bloggers, videographers, and technology providers, of which 2 million are full-time professionals. These statistics do not include content creators that work for the established television, film, and streaming service industries—a huge source of business and jobs for these independent creators.

- A **Gig/Contingent Workforce Economy** is an environment where temporary positions are common, and organizations contract with independent workers for short-term engagements. The Gig/Contingent Workforce Economy is creating an employment landscape that provides an opportunity for workers in the future economy where part-time and temporary workers outnumber full-time workers with standard workforce agreements. The gig/contingent workforce soon will be the dominant (50%) form of labor in the United States based on (1) the emerging digital economy, (2) revolution in digital and network technologies, (3) automation of manual and cognitive jobs, (4) shift from full-time to task-oriented labor, and (5) cultural differences of new labor force entrants.

- A **Data-Driven Economy** involves accessing and exploiting information and knowledge in big-data pools to maximize operational efficiencies and reduce costs. While difficult to measure, McKinsey Global Institute estimates that the economic impact of Big Data could generate $30 trillion in additional value this decade in seven industries (education, transportation, consumer products, electricity, oil and gas, health care, and consumer finance).

- The **Internet of Everything (IoE) Economy** expands Internet of Things (IoT) machine-to-machine interactions to an ecosystem encompassing people and processes. IoE is well on its way to connecting tens of billions of things to enable billions of connected people. Cisco estimates that 99.4 percent of physical objects that may one day be part of the IoE are still unconnected. With only about 10 billion out of 1.5 trillion things currently connected

globally, there is vast potential to "connect the unconnected." The economic impact of IoT alone is estimated at $11 trillion by 2025, with 75 billion connected devices. The Internet of Behaviors (IoB) uses IoT/IoE technology to influence behavioral changes from healthcare wearables to consumer monitoring to behavioral care applications (mental illness, childcare, etc.).

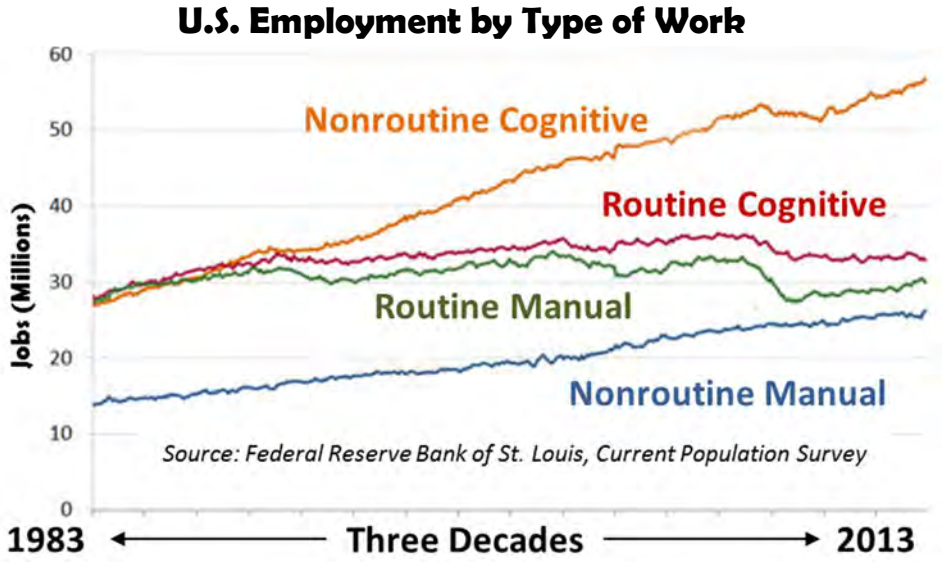
Automation & Job Polarization

By combining artificial intelligence, machine learning, deep learning, data mining, and natural user interfaces, platforms automate many knowledge worker tasks formerly impossible or impractical for machines to perform.

Artificially intelligent agents and bots now can perceive the environment and intelligently perform tasks that anthropomorphize human form, activities, and attributes across the social, economic, political, and military spectrum. As skilled labor becomes less available or too costly, employers turn to automation to augment, displace or replace the standard workforce.

Automation has been replacing **routine manual labor tasks** for decades. As evidenced by factory floor robotics, emerging DTR technologies, processes, and systems replace **routine cognitive tasks**, skills, jobs, and occupations at greater and greater rates.

Studies suggest that automation will replace half of the U.S. labor force by 2030. Routine cognitive and manual jobs are most at risk, whereas jobs with non-routine cognitive and manual skills will become more valuable.



According to a Federal Reserve Analysis, the U.S. labor force is undergoing "job polarization" with declining middle-skill cognitive and manual routine jobs compared to increasing higher-skill

cognitive and manual non-routine jobs.[41] The Fed believes that the most likely drivers of job polarization are automation and offshoring. Both forces lower the demand for middle-skill occupations relative to high-skill domains. Jobenomics includes the rising contingent workforce is also a factor as standard full-time jobs are giving way to temporary part-time and task-oriented work.

According to another report published by the U.S. Federal Reserve Bank of Kansas City, job polarization is a primary cause for the vanishing American middle-class. "Over the past three decades, the share of middle-skill jobs in the United States has fallen sharply. Middle-skill jobs are where workers primarily perform routine procedural and repetitive tasks. The decline in the employment share of middle-skill jobs has been associated with many sweeping changes affecting the U.S. economy, including the advancement of technology, outsourcing of jobs overseas, and contractions in manufacturing."[42]

According to a University of Oxford study on computer automation, "about 47% of total U.S. employment is at risk over the next two decades". If Oxford's estimates are correct, out of the 143 million U.S. nonfarm workers, 67 million jobs could be at risk. This obsolescence will impact all workers, including degreed workers who have routine manual and cognitive skills.

U.S. Occupations Subject To Computerization

Source: Oxford University, The Future of Employment: How Susceptible Are Jobs To Computerization?
0% = not computerizable, 100% = fully computerizable

Probability of Computerization	Sample U.S. Occupations (from 702 Occupations)
0% to 9%	Executives, supervisors, doctors, therapists, scientists, engineers, designers, lawyers, clergy, teachers, instructors, trainers, advisors, social workers
10% to 20%	Chefs/cooks, chemists, technicians, hairdressers, air traffic controllers, pilots, firefighters, electricians, physician assistants
20% to 29%	Middle managers, computer occupations, analysts, concierges, engineering technicians, sales representatives, middle school teachers
30% to 39%	Actors, medical assistants, investigators, editors, flight attendants, bailiffs, surveyors, interpreters/translators, upholsterers, plumbers
40% to 49%	Judges, health and medical technicians, law clerks, electronic repairers, economists, historians, computer programmers, dispatchers
50% to 59%	Court reporters, product promoters, leather workers, commercial pilots, teacher assistants, cost estimators, transit police, personal financial advisors

[41] Federal Reserve Bank of St. Louis, Jobs Involving Routine Tasks Aren't Growing, 4 January 2016, https://www.stlouisfed.org/on-the-economy/2016/january/jobs-involving-routine-tasks-arent-growing

[42] Federal Reserve Bank of Kansas City, The Vanishing Middle: Job Polarization and Workers' Response to the Decline in
Middle-Skill Jobs, https://www.kansascityfed.org/publicat/econrev/pdf/13q1tuzemen-willis.pdf

60% to 69%	Jailers, meat packers, ticket agents, pipe layers, building inspectors, stock clerks, librarians, janitors, bus drivers, mail carriers, dental hygienists
70% to 79%	Airfield operators, laundry workers, carpenters, broadcast technicians, archivists, painters, bartenders, machine & computer operators
80% to 89%	Attendants, bellhops, cashiers, toolmakers, security guards, meter readers, power plant operators, drillers, conservation workers, real estate agents, construction laborers, cartographers, bakers, stonemasons, technical writers
90% to 100%	Inspectors, appraisers, bookies, tour guides, station operators, pharmacy technicians, insurance sales agents, retail sales, butchers, accountants, auditors, waiters, welders, messengers, paralegals, assemblers, clerks, receptionists, gaming dealers, cashiers, real estate brokers, tellers, umpires/referees, loan officers, tax preparers, underwriters, telemarketers

The Oxford University study on the effects of computer automation on the American labor force is the first significant effort to quantify what recent technological advances may mean for future employment and the labor force. Oxford analyzed 702 occupations from the U.S. Department of 0% (not computerizable) to 100% fully computerizable.

The Oxford study acknowledges that political and sociological forces will likely restrict many of these jobs from being computerized. Historical objections to factory floor manual labor automation eventually gave way to free-market forces. At the dawn of the Industrial Revolution (England 1811-16), Luddites tried to organize and destroy factory automation to preserve standard jobs. Today's Luddites may slow down the transformation rate, but the economics of automation will eventually defeat techno-pessimists who are resistant to new technologies and change.

From a Jobenomics perspective, low-skill jobs are the easiest to automate. In contrast, medium-skilled jobs are the easiest to bifurcate into task-oriented work performed by a combination of humans and artificial intelligence. While the DTR creates new positions for high-skilled workers, it is causing increased competition for medium and low-skilled workers replaced by AI-enabled machines. Increased competition causes workers to accept lower-wage jobs or force medium and low-skill workers into the contingent workforce or entirely out of the labor pool.

Since 2000, U.S. economic growth has been two-thirds less than before the turn of the century. Jobenomics' primary concern is that DTR innovation benefits the few rather than the many. While the nascent AI Economy has produced remarkable achievements like the iPhone, Google, eBay, Facebook, and Skype, median wages have stagnated in about half of all OECD countries. Unlike the 19th Century Industrial Revolution innovations that created gains for producers and workers, the DTR generally **benefits producers but displaces workers**. Oxford Martin School agrees, "While the digital age has been a blessing to consumers, it is changing the world of work in ways that may make **a growing share of workers worse off**."

A 2017 study conducted by the Massachusetts Institute of Technology Media Lab used the same occupational data as Oxford to measure the "expected job impact from automation" on 380 cities and towns in the United States.[43] Like the 2013 Oxford Study methodology, the MIT Media Lab rank ordered 481 BLS occupations from the most resilient to the most vulnerable.[44]

According to MIT, small cities and towns are more likely to lose jobs to larger urban centers with abundant managerial and technical professions that are not as sensitive to robotics and artificial intelligence automation. Large cities also harbor more innovative workers that use cutting-edge technologies. Towns with less than 100,000 people are more subject to automation since they have a higher percentage of routine manual and cognitive workers, such as cashier and food service jobs, which are more susceptible to automation.[45]

Digital Natives Will Shape America's Economic Future

From a Digital Economy perspective, Jobenomics sees three major U.S. labor force trends occurring today that will have a dramatic effect on America's future economy and employment, (1) more than any other labor force trend, the Digital Technology Revolution will create as many employment opportunities for the nonemployer businesses as the contingent workforce as employer businesses and the standard workforce, (2) new workforce entrants and DTR-savvy digital natives have a substantially different view regarding the way business is currently conducted and their roles in business, and (3) those who cannot adapt will likely depart the U.S. labor force to the growing netherworld of perpetual familial and government assistance.

The global digital economy will be shaped mainly by the digital generation and the ideology of their mentors. Generation Zers are called "Screenagers" by Jobenomics due to the excessive amount of online screen time these youngsters absorb. Screenagers are the ultimate digital natives who will shepherd America into the Networked Age. Currently college-age and younger, Screenagers will soon be the fast-growing segment of the U.S. labor force, standing beside their digital compatriots, the Millennials, who have become the largest generation in the workforce.

Screenagers and Millennials generally prefer contingent work over traditional full-time occupations. 61% of Millennials still at "regular" jobs want to quit within two years and be entirely independent. 72% of surveyed Screenagers wish to start their own business. While much of this is wishful thinking, the digital economy will provide many of these Millennials and Screenagers with business and traditional and contingent employment opportunities to make their wishes come true.

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[43] Massachusetts Institute of Technology Media Lab, Small cities face greater impact from automation, Relating City Trends to BLS Jobs, Pages 44– 55,.21 September 2017, https://arxiv.org/abs/1705.05875

[44] Massachusetts Institute of Technology Media Lab, Small cities face greater impact from automation, Cities Ordered by Expected Job Impact from Automation, Pages 37 – 44,.21 September 2017, https://arxiv.org/abs/1705.05875

[45] MIT Technology Review, In These Small Cities, AI Advances Could Be Costly, 23 October 2017, https://www.technologyreview.com/s/609076/in-these-small-cities-ai-advances-could-be-costly/

Unfortunately, new entrepreneurs aged 20-34 declined from 34% to 27% between 1996 and 2019. This decline is often related to student loan debt (92% of all student loans worth $1.75 trillion). People under age 30 hold one-third of all outstanding student loan debt. This debt inhibits Screenagers and Millennials from launching a startup or hiring more people from a business and employment perspective. Moreover, Business failure is more for business owners carrying student loan debt.[46]

Canceling all student debt would infuse capital for business and job creation but is not feasible politically or economically. Consequently, Jobenomics recommends expanding the existing student loan forgiveness, cancellation, and discharge programs. For example, the Public Service Loan Forgiveness (PSLF) Program forgives the remaining balance while working full-time for a qualifying government or not-for-profit organization employer. The PSLF could include startup micro and nonemployer firms that help fill critical job openings.

Digital Technology Revolution's Perfect Storm

The transformative power of the Digital Technology Revolution (DTR) provides a virtual cornucopia of startup business and career opportunities for digital natives and other aspirants. To exploit this digital horn of plenty, they must be technically proficient in one or more of the dozens of emerging digital and network technologies

The DTR is a "perfect storm" of dozens of new technologies, systems, processes, and services, including (in no particular order of priority):

> B**ig data** (datasets that are too large to efficiently handle), **cloud** and **distributed cloud computing** (practice of using a network of remote servers hosted in data centers to store, manage, and process big data), **edge computing** (mini data centers located closer to the "edge" of client side of the server-client equation), **semantic webs** (thinking websites), **smart devices** (TVs, tablets, watches, glasses, wearables, hearables and appliances), **synthetic reality** (blending of the virtual and natural worlds, augmented reality [AR], virtural reality [VR] and mixed reality), **multiexperience** or **total experience** (integrating synthetic reality with multiple touch points: touch, voice and gesture), **mobile computing** (proliferation of smart mobile devices and micro-devices), **computer vision** (extracting information from digital images and videos), **ubiquitous video** (the ability to capture, create, consume, and distribute video content almost anywhere), **ubiquitous operations** (using digital and network technology to work or operate from anywhere), **ubiquitous computing** (embedding microprocessors in everyday objects to communicate without human interaction), **quantum computing** (harnessing the power of atoms and molecules to perform computer processing orders of magnitude faster), **democratization** (using technology to enable ordinary citizens to generate complex digital solutions), **5G**

[46] Ewing Marion Kauffman Foundation, Entrepreneurship Issue Brief, 2020: No. 5, Student Loans and Entrepreneurship: An Overview, https://www.kauffman.org/wp-content/uploads/2020/07/Kauffman_Issue-Brief_Student-Loans-and-Entrepreneurship_2020.pdf

broadband networks (50-fold speed increases and 1000-fold data volume improvements), **livestreaming** (simulateous delivery of video or audio to an audience over the internet as the data is created), **geo-location** (the process of determining the location of an entity by means of digital information processed via the Internet), **near-field communications** and **beacons** (short-range wireless technology that connects devices), **contactless operations** (touchless deliver, shipping and payments), **hyper-accurate positioning** (advanced global positioning system [GPS] with accuracy in millimeters rather than meters), **inductive charging** (electromagnetic wireless charging of devices, micro-devices and nano-devices), **spatial sensing** (real-time detection, measuring, mapping and analysis of objects in relationship to the environment), **computer vision** and **pattern recognition** (training computers to gain high levels of understanding from digital images and videos and recognizing patterns and regularities in the data), **natural language processing** and **speech recognition** (the ability of a computer program, machine or intelligent agent to understand and respond to human speech), **generative pre-trained transformer** (an autoregressive language model that uses deep learning to produce written text as proficiently as a human), **data mining** (the practice of analyzing large databases in order to generate new information), **predictive analysis** (using advanced algorithms to analyze large databases to make predictions about unknown future events), **predictive routing** (using advanced algorithms to find the most effective and efficient way to resolve a customer inquiry), **machine learning** (systems that can learn and teach each other), **transfer learning** (machine "reasoning" that takes lessons learned from past human experiences and applies it digital domains), **deep learning** (an artificial intelligence technique allowing machines to extract patterns from big data in the same manner that the human brain does), **customer data platforms** (CDP, collecting, organizing, tagging data from all available sources and making it accessable), **robots** and **drones** (automated machines capable of movement), **internet bot** (bot, a software-driven artificial agent designed to automate a specific task), **chatbots** (web robots that run automated tasks or simulate conversations with users), **telepresence** and **telechirs** (operating machines remotely to sense and create an effect or control), **telehealth** (remote non-clinical care and services via the internet or robotics), **telemedine** (remote remote clinical services in association with a physican), **cobotics** (collaborative robots working in direct interaction with humans, a "centaur"), **messenger RNA** (using mRNA create a wide variety potential vaccines), **automation** (replacing humans with robots and artificial intelligence), **hyperautomation** (automating automated systems to create a "digital twin" of an enterprise), **nanobotics** (also called nanomachines, nanoids, nanites and nanomites are microscopic self-propelled machines with a degree of autonomy and reproductive capability at the molecular level), , **mechatronics** (technology combining electronics and mechanical engineering), **memetics** (machines that can create memes to mimic cultural traits and ideas), **biometrics** (agents that can identify and track biological traits), **smart cards** (credit card-like devices that can send and store personal and identifying material), **smart & automous vehicles** (augmented reality dash navigation systems to self-driving vehicles), **lithium-metal batteries** (significantly advanced, more powerful and smaller batteries), **green hyox** (coverting water into clean hydrogen for energy and dissolved oxygen for health), **fintech** (financial technology oriented to

transforming incumbent financial institutions and corporations), **blockchains** (distributed digital economy public ledgers), **crytocurrency** (a secure digital currencies), **cybersecurity** (protecting that information by preventing, detecting, and responding to cyber attacks), **non-fungible tokens** (NFTs, unique non-interchangeable digital assets verified on a blockchain), **cybersecurity mesh** (creating a cyber security perimeter anour the digital domain of a person or thing), **private** or **confidential computing** (encrypting the entire computing process rather than just the data), **multifactor credentialing** (automated authentication and identification of crowds, individuals, and intelligent agents), **cyberwarfare or cyberattack** (use of digital attacks to disrupt vital computer systems), **emotive surveillance** and **management** (systems that analyze and manage emotions), **edtech** (education technology that uses a combination of AI tools and education practices), **identity management** (controlling user access and restoring damaged online identities), **digital contact tracing** (using smartphones and embedded device to track and log movements of people and things), **anonymity networks** (networks that enable users to block or trace data and identities), **ambient intelligence** (enabling formerly inanimate or mute objects to communicate), **artificial intelligence** (or AI, intelligent algorithms and agents that will augment human interactions), **intelligence agents** (AI agents that replace or supersede the need for human intervention and actions), **multi-skilled AI** (equipping AI and robots with computer vision and audio recognition), **ubiquitous AI** (globally integrated AI and robots that can operate 24/7/265 with access to worldwide data sources), and **AI security** (controlling or constraining artificial agents from becoming too intelligent or an existential threat to mankind when AI reaches "**singularity**"—general intelligence equal to a human—or **superintelligence** that greatly exceeds human ability to comprehend multiskilled and ubiquitous AI actions and intentions).

This list of emerging and disruptive technologies will create billions of new jobs and businesses worldwide in the next decade. Due to the transformative speed of these technologies, most of these jobs and business opportunities will require professionally accredited certifications rather than formal education degrees. Consequently, the Jobenomics Digital Academy will use this list as the starting point for accredited skills-based training. Then the Jobenomics Business Generator will create startup businesses (sole proprietorships, partnerships, and S-Corporations) for certified students.

Lifelong Applied Learning Centers

Known as the "father of American education," Horace Mann (1796–1859) was the transformational force that made education affordable to average citizens who could not afford to send their children to school. Horace believed that "education, beyond all other devices of human origin, is the great equalizer of the conditions of men, the balance-wheel of the social machinery." Due to the brilliantly innovative and creatively destructive nature of the Digital Technology Revolution, America needs another transformational force to provide underserved communities with the skills required to succeed in the emerging digital economy.

From a Jobenomics perspective, understanding the difference between education and training is fundamental to U.S. labor force development. Education is foundational (ground laying) and academically oriented. Training is specific and measured by what one can do once completed. Educational degree-oriented programs are calculated in years and are usually expensive. Training programs are tactically oriented (narrow-scoped) and relatively inexpensive. Training is often as short as weeks or months.

Training and learning are the opposite sides of the same coin. According to Jack Welch, former CEO and business sage, "an organization's ability to learn, and translate that learning into action rapidly, is the ultimate competitive advantage." Training involves a process to help a person learn. Learning is acquiring knowledge, skills through being taught (education and training), or experience. Training occurs at a specific place and time. Learning is a lifelong process.

Lifelong learning is the provision or use of formal and informal learning opportunities throughout people's lives to foster the continuous development and improvement of the knowledge and skills needed for employment and personal fulfillment. Foundational and on-the-job education and training are critical but not all-inclusive elements of the lifelong learning process.

Lifelong applied learning and **transformation mapping** are two of the Jobenomics Digital Academy guiding principles, which will mass-produce startup businesses and careers in the digital domain.

Jobenomics defines lifelong applied learning as perpetual learning linked to current and emerging national, business, employment, and income opportunities. Economic and industry transformation mapping is central to the lifelong applied learning process.

Since digital literacy requires both social and technical skills, the Jobenomics lifelong applied learning process includes reskilling and upskilling technical and social programs to prepare citizens for today's workforce.

Technical training teaches skills needed to design, develop, implement, maintain, support or operate a particular digital technology or related application, product, or service. Social skills training is an individual or group tutoring for those who need to overcome social inhibition or ineffectiveness and teaches effective social interaction in specific situations (e.g., job interviews). The Jobenomic Digital Academy social skills training programs will emphasize the following:

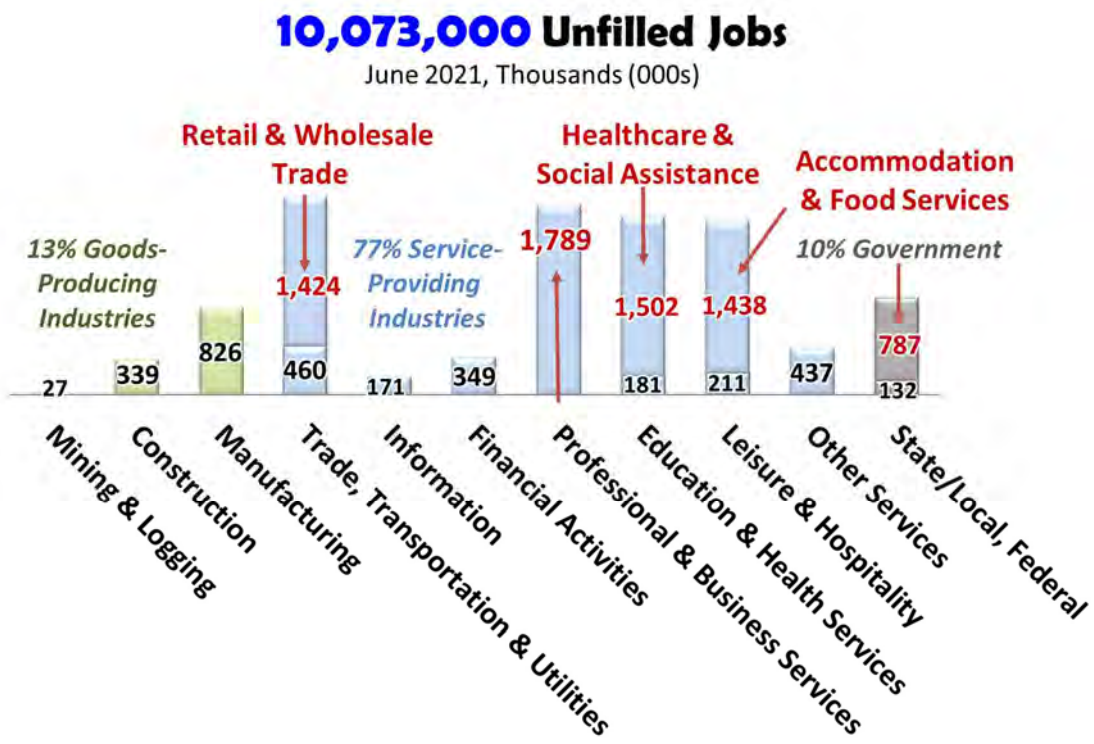
- **Organizational skills training**: analytical thinking, innovation, active learning strategies, technology, and programming.
- **Intrapersonal skills training**: creativity, originality and initiative, critical thinking, and complex problem-solving.
- **Interpersonal team building and conflict management skills training**: emotional intelligence, assertiveness, persuasion, negotiation, leadership, and social influence.

Today's onslaught of rapid technology-induced transformation mandates a much greater linkage between lifelong learning and workforce development. Rapid change requires transformation

mapping tools. These tools will include many emerging technologies to take the guesswork out of predicting the future and provide empirical data for policymaking and decision-making.

Job Openings By Industry

Source: Bureau of Labor Statistics, Job Openings and Labor Turnover Report



According to the August 2021 Bureau of Labor Statistics Job Openings and Labor Turnover (JOLT) report, the United States had 10,073,000 unfilled job openings in June, a record high. [47] In addition, the 6 August 2021 BLS Employment Situation Summary reported 8,702,000 officially unemployed workers (U3 category) and 100,123,000 sidelined adults who are work-capable (Not in Labor Force category).[48] Without digital job skills, most of these 108.8 million unemployed/sidelined citizens will be qualified to fill today's 10.3 million open job positions.

As addressed earlier, job polarization and automation make filling vacant employment positions harder, perhaps much harder than ever before, for underserved and under-resourced communities—the primary focus areas for the Jobenomics National Grassroots Movement. As discussed in Chapter 1, only one-third of the U.S. workforce has the advanced digital skills to succeed in today's digital economy. The rest of the workforce possesses "fragmented" digital skills. They can use smartphones to play games, send emails, and post videos but are not digitally

[47] U.S. Bureau of Labor Statistics, Economic News Release, Job Openings and Labor Turnover Summary, 9 August 2021, https://www.bls.gov/news.release/jolts.t01.htm

[48] U.S. Bureau of Labor Statistics, Employment Situation Summary, Table A-1. Employment status of the civilian population, https://www.bls.gov/news.release/empsit.t01.htm

literate enough to perform fundamental business tasks, such as spreadsheets, presentations, and document editing.

As indicated by JOLT data, U.S. educational system is not providing the essential job skills to fill open employment positions in the traditional economy. Consequently, the U.S. educational system is unlikely to equip our students for the digital economy.

Unlike teaching basic job skills, U.S. primary, secondary, and tertiary educational institutions focus on imparting or acquiring general knowledge, developing reasoning and judgmental powers, and preparing intellectually for mature life. Furthermore, the economic model for these institutions depends on long-term commitments (4 to 6 years) from the educators and students. In contrast, the Jobenomics Digital Academy's focus on certified skills-based training takes weeks or months. Being highly regulated makes publicly-funded educational establishments less responsive to rapidly changing business and career opportunities. Jobenomics Business Generator is laser-focused on emerging career and business startup opportunities.

Degree-oriented postsecondary programs are usually the best choice for well-resourced students seeking long-term careers. For the underprivileged, unskilled, and poorly educated, certified skills-based training provides the most effective way to get a good job, the first step towards a meaningful career. Certified skills-based training is often preferable for entrepreneurs to start micro and nonemployer businesses in the burgeoning digital economy.

Technology is also creating a form of job polarization between traditional full-time employees and part-time contingency workers. Gig/contingency workers represent 40% of today's workforce. By 2030, they will likely represent well over 50%, further bifurcating American society into haves and have-nots.

To those at the top of the American socioeconomic pyramid, the old paradigm of "get a degree to get a job, and get a better degree to get a better job" is more important than ever. More technical and social skills training are needed to stem the increasing exodus to dependency and alternative lifestyles at the bottom of the same pyramid.

Chapter 3. Startup Micro & Nonemployer Business Imperative

Startups Create More Jobs Than Legacy Firms

Startup businesses are seed corn for economies. If cultivating this seed corn is haphazard, economies wither.

According to the Kauffman Foundation, the leading U.S. institution on entrepreneurship and startups, local officials wrongfully concentrate on big businesses for economic and community development rather than launching new companies.

Regrettably, U.S. startup businesses are faltering. If the United States created new firms at the same rate as in the 1980s, the USA would have 200,000 more firms and 72 million (1.8 million per year) jobs than today, according to a Wall Street Journal analysis of Census Bureau Busines Dynamics Statistics (BDS).

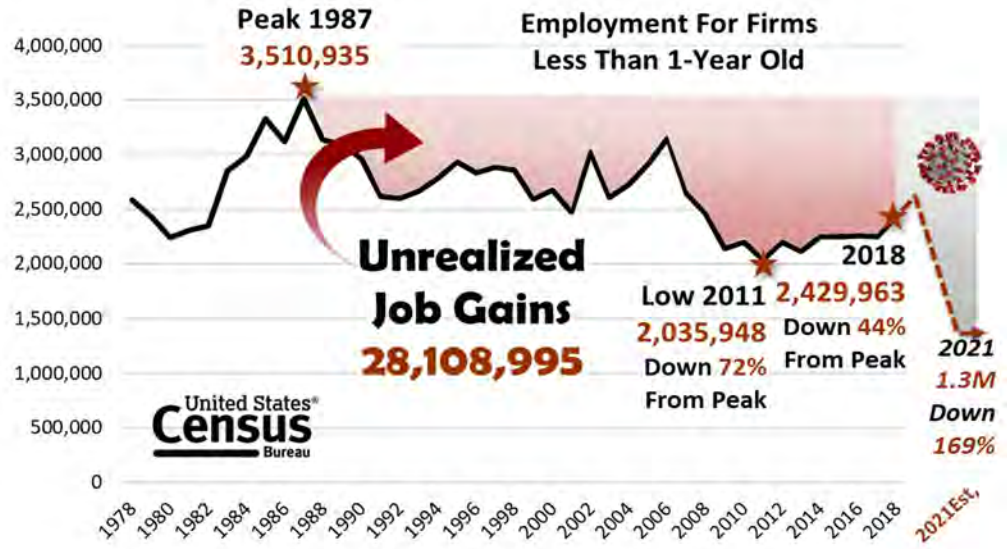
In 1978, the Census Bureau began the Business Dynamics Statistics (BDS) program to provide annual measures of **employer** firm **startups** and shutdowns, establishment openings and closings, and job creation and destruction.[49]

Per the BDS, the peak year for startup job creation was 1987, generating 3,510,935 new payroll jobs. Annual employment created by startups decreased 72% from the 1987 peak to a record low in 2011 of 2,035,948 following the Great Recession. By 2018 (latest data), yearly startup payroll gains increased slowly to 2,429,963 but were still 44% below the 1987 peak. Assuming that the United States had maintained annual employment gains at 1987 levels, unrealized workforce gains (potential jobs lost) amounted to 28.1 million jobs.

[49] U.S. Census Bureau, Business Dynamics Statistics (BDS), About, https://www.census.gov/programs-surveys/bds/about.html

Declining Number Of Startup Employer Firm Jobs

Source: Census Bureau, Business Dynamics Statistics[50]



Based on Jobenomics estimates, employer business startups produced 2.6 million new jobs in 2019 (182,000 more than in 2018). In 2020, the COVID-19 pandemic devastated startup businesses. Accommodation, travel, entertainment, and food services were the hardest-hit industries. Anecdotal data suggests that startup employment dropped by 50% to 1.3 million per year in 2020—a 169% decline from the peak year. 2021 will also likely remain around 1.3 million due to a tepid economic recovery and continued pandemic restrictions. Thus, an additional 5.3 million jobs did not materialize over the last three years, for an estimated total loss of **33.4 million unrealized jobs** since 1987.

While many firms are hiring as the pandemic subsides, 200,000 shuttered brick-and-mortar businesses will never restart. However, the silver lining during the darkness of the pandemic is the rise of Covid-prenuers. During the pandemic, the media overwhelmingly showed the demise of small businesses. While the COVID lockdowns decimated brick-and-mortar firms, digital startups flourished with no media attention.

The following chart, derived from the Census Bureau's monthly Business Formation Statistics (BFS) news release, shows total Business Applications and High-Propensity Business Applications for an Employee Identification Number (EIN). An EIN is also known as a Federal Tax Identification Number and identifies a business entity. All incorporated employer and nonemployer (S-Corps, C-Corps, Partnerships) businesses need an EIN.

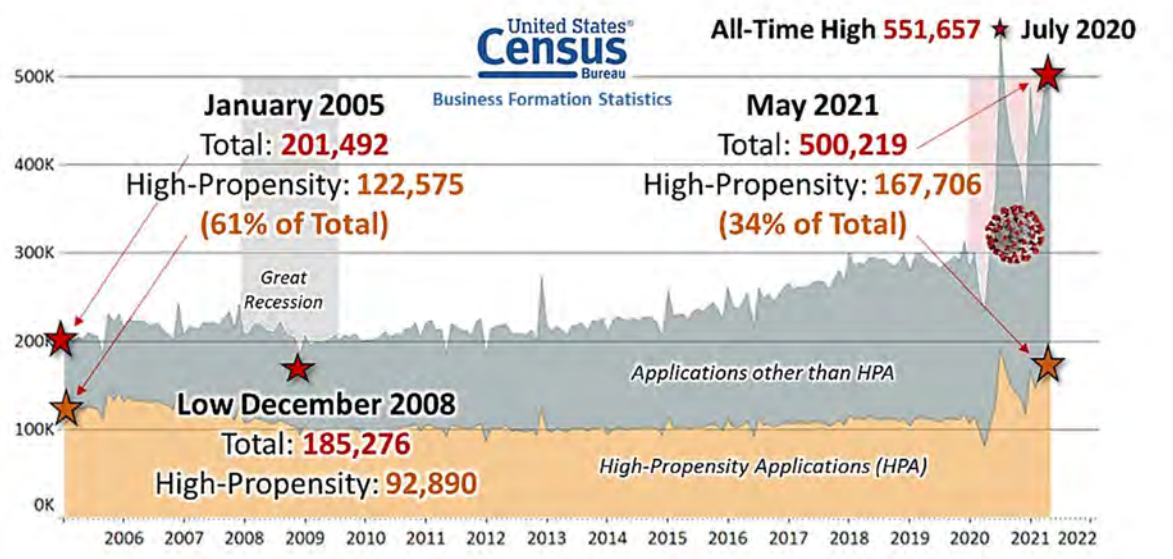
EINs are recommended but not required for unincorporated sole-proprietorship owners, who can use their social security number instead. As discussed in the next section, the U.S. Census

[50] U.S. Census Bureau, Business Dynamics Statistics, BDSFAGE - Business Dynamics Statistics: Firm Age: 1978-2018. Firm Age Less Than 1-Year Old, retrieved 10 May 2021, https://www.census.gov/data/tables/time-series/econ/bds/bds-tables.html

Bureau estimates 23 million unincorporated sole-proprietorships. Consequently, the number of new business formations without EINs could be substantially higher than the Business Formation Statistics suggests.

Monthly New Business Applications

Source: U.S.Census Bureau Business Formation Statistics news release [51]



Total Business Applications (BA). In 2020, the U.S. Census Bureau recorded a historic high number of new business applications that were three times higher (298%) than the low during the last financial crisis (551,657 in July 2020 during the peak of the COVID pandemic versus 185,276 in December 2008 at the height of the Great Recession). COVID-preneurs submitted a record 4,346,670 new business applications in 2020, increasing 24% over 2019.

Business applications in 2021 are also soaring, with 2,362,406 new filings in the first five months. At this rate, 2021 may have as many as 5.6 million business applications, a 62% increase over 2019 and an enormous 125% rebound over 2008. The reason that the COVID pandemic outperformed the Great Recession in business optimism is **the power and promise of the digital economy**.

Per Quartz, an international business journal, the recent surge in total business applications is mainly due to COVID retail entrepreneurs. Since the pandemic's beginning, the number of weekly applications for new, non-store retail businesses far outpaced every other kind of retail. Non-store retail includes food trucks, vending machines, mail, and home shopping channels like QVC.[52]

[51] U.S. Census Bureau, Business Formation Statistics May 2021 Newsletter (Release # CB21-94), 10 June 2021, https://www.census.gov/econ/bfs/pdf/bfs_current.pdf, and The Federal Reserve Bank of St. Louis, Business Applications: Total for All NAICS in the United States https://fred.stlouisfed.org/series/BABATOTALSAUS

[52] Quartz, More people in the US are starting businesses because of Covid-19, 25 November 2020, https://qz.com/1938131/us-business-applications-are-growing-due-to-covid-19/

High-Propensity Business Applications (HBA). High-Propensity Business Applications are applications that have a reasonable probability of becoming a payroll business. Because of their job-creating potential, high-propensity enterprises are of particular interest to economists, business leaders, and policymakers.

In May 2021, the Census Bureau recorded 167,706 High-Propensity Business Applications or 34% of the total registered applications. While the number of HBAs was significantly higher than in past years, the percentage is below former years. For example, 34% is below the 46% monthly average since 2005 and below the 61% recorded in January 2005.

Business Formation Statistics also include data on High-Propensity Business Applications with planned wages (57,000 in May 2021) and corporations (52,499), reflecting the U.S. propensity to favor large employer enterprises over nonemployer and micro-businesses. Thus, from a Jobenomics perspective, large employers are the bedrock of the U.S. economy, and nonemployers and small businesses comprise the backbone of the U.S. labor force. Moreover, policymaker preoccupation with full-time payroll and wage employment depreciates the value of gig workers and full-time self-employed, who comprise about 40% of our workforce

Driven mainly by opportunity (as opposed to necessity), digital entrepreneurs are forming startup nonemployer and employer firms at historically high rates. According to Legal Zoom, the average weekly new business applications in 2020 (84,253) grew at the fastest pace since 2007 (51,324) and 80% higher than average in 2008 (48,473) and 2009 (46,377) during the Great Recession.

During the height of the lockdown and stay-at-home orders (March to June 2020), COVID-preneurs started firms at a rate 40% higher than during the Great Recession years (66,503 versus 47,425). After the U.S. lifted stay-at-home orders (June to September 2020), the average weekly new business applications skyrocketed to 111,000, or 134% higher than during the Great Recession (111,000 versus 47,425).[53]

In the words of one of the greatest thinkers (Albert Einstein), "in the midst of every crisis lies great opportunity." The pandemic crisis's great opportunity is explosive growth in digital startups, which advanced by at least a decade in the last year. E-commerce, edtech, fintech, e-health, blockchain, artificial intelligence, mobile apps, and many similar businesses are now growing like they are on steroids.

The pandemic forced significantly more consumers and businesses to rely on digital technology to buy and sell products and services during the crisis. The speed of digital adoption and economic transformation has been unprecedented. Rapid change begets enormous opportunities in the new normal. Digital startups address these new consumer interests and serve the restoration of the U.S. economy and labor force.

[53] Legal Zoom, 86 Key Entrepreneur Statistics for 2021 and Beyond, The Rise of the Covid-preneurs, source: U.S. Census Bureau, https://www.legalzoom.com/articles/entrepreneur-statistics

Other than spending lavishly, Washington DC policymakers have few actionable plans to re-energize the U.S. workforce, which is still 7 million jobs smaller since the pandemic. Massive shovel-ready infrastructure programs will provide temporary jobs (assuming that people will return to work after a two-year hiatus), but the results will be small relative to the long-term impact of the digital economy. For example, president Biden's sweeping $2 trillion infrastructure package only contains around 5% for digital infrastructure—a miniscule amount compared to the oversized potential economic impact of the digital economy.

Consequently, the digital economy offers a unique opportunity for policymakers to mass-produce jobs and startup businesses. Affordable Jobenomics Digital Academy and Business Generators can generate well-paying digital careers in every city, town, community, or neighborhood that wants to prioritize locally-owned business creation.

Almost All Digital Startups Are Nonemployer Or Micro Employer Businesses

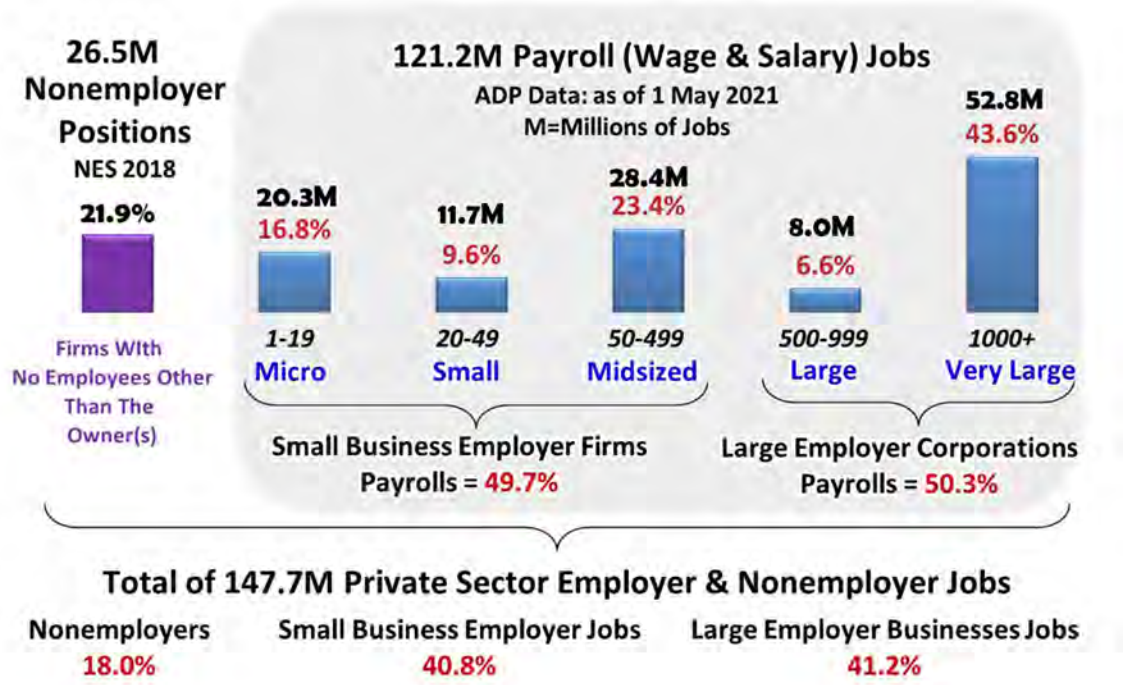
Micro & Nonemployer Startup BusinessTypes

Micro and Nonemployer firms include:

- **Independent contractors**: accountants, authors, actors, bookkeepers, engineers, masons, real estate agents, teachers, and many more,
- **Consultants**: human resources, financial, information technology, management, etc.,
- **Freelancers**: administrative support, design, legal, journalists, tutors, marketing and sale, web and apps developers, etc.
- **On-Demand Workers**: home health aides, Uber and Lyft drivers, nurses and doctors, delivery services, operations support, IT and security analysts and services, physical therapists, etc.
- **Flex Workers**: analysts, dental assistants, loan officers, engineers, x-ray technicians, EMTs, educational assistants, community support assistants, etc.
- **Gig Workers**: ride-sharing, delivery driving, selling crafts, coding, programming, handyman, photography, babysitting, dog walking, renting, chef, etc**.**
- **Contingent Workers**: non-permanent workers hired on a per-project basis.
- **Self-Employed Workers**: earn income directly from one's own business, trade, or profession rather than a specified salary or wages from an employer**.**
- **Part-Timers**: who work less than 40 hours per week out of necessity or choice, and workers who work full-time via multiple part-time jobs.

U.S. Private Sector Workforce

Sources: U.S Bureau of Labor Statistics Employment Situation Summary,
and U.S.Census Bureau Nonemployer Statistics



As shown by the U.S. Bureau of Labor Statistics (BLS), U.S. businesses employ 121.2 million private-sector wage and salary workers.[54] Small businesses (1-499 employees) make up 49.7% of the total. Micro-businesses (1-19 employees) employ 16.8% or 20,296,000 people. Employer and nonemployer establishments support 147.7 million jobs, of which nonemployers, small businesses (1-499 employees), and large employer corporations (500+) represent 18.0%, 40.8%, and 41.2% of the U.S. private sector workforce.

Per the U.S. Census Bureau Nonemployer Statistics (NES) program, the United States has 26,485,532 nonemployer firms with annual revenues of over $1.3 trillion. [55] Nonemployer businesses are generally small incorporated or unincorporated firms, such as self-employed business owners and independent contractors.

Approximately 90% of nonemployer firms are sole proprietorships with one owner. The remaining 10% consists of partnerships and corporations with one or more owners but no employees. For this discussion, Jobenomics assumes only one owner per establishment. Hense, 26,485,532 firms support an equal amount of jobs.

[54] U.S. Bureau of Labor Statistics (BLS), News Release, Employment Situation Summary, April 2021, https://www.bls.gov/webapps/legacy/cesbtab1.htm and https://www.bls.gov/news.release/empsit.nr0.htm
[55] U.S. Census Bureau, Nonemployer Statistics (NES), About this Program, Paragraph 2, https://www.census.gov/programs-surveys/nonemployer-statistics/about.html

Almost all startups are either employer micro-businesses (owner plus 1-19 employees) or nonemployer firms (owner plus zero employees). These are the two principal focus areas of the Jobenomics Digital Academy & Business Generator program. Nonemployer and micro-business categories collectively support 42.2 million livelihoods and are overwhelmingly the fastest-growing U.S. labor force sectors.

Business Types And Considerations For Startup Businesses

Source: Legal Zoom, Business Types 101

Business Types	General Considerations	Liabilities	Taxation
Sole Proprietorship	No paperwork or filing fees to start. One owner max. May need a business license to operate.	Owner is personally responsible for business liabilities (i.e., no "corporate veil").	No Employer ID Number (EIN) or company tax return required. Pay business income via personal tax return.
Limited Liability Company (LLC)	Unlimited owners (members) allowed. Board not required. Can not go public.	Not personally liable. Personal assets generally protected except for criminal behavior.	Taxed either once or twice based on incorporation.
S Corporation	Limit of 100 shareholders (individuals or trusts). Owner can get only common stock.	Not personally liable. Personal assets generally protected except for criminal behavior.	Taxed once as a "pass-through entity" reported on personal tax return.
C Corporation	Preferred by investors. Unlimited owners (shareholders) may get preferred stock. Best structure to go public. Recognized internationally.	Not personally liable. Personal assets generally protected except for criminal behavior.	Taxed twice. Business pays at the corporate level, and shareholders pay on income received,
Nonprofit	No owners. Access to public and private grants. Must have Board of Directors. Strict rules and compliance paperwork.	Not personally liable. Personal assets generally protected. Prohibited from engaging in certain activities (e.g., politics).	IRS 501(c)(3) tax exempt status.

Business types and considerations for startup businesses vary from sole proprietorships to limited liability companies to for-profit and nonprofit corporations. A sole proprietorship is the most straightforward business to form, whereas incorporation is more complex and involves more government oversight. The general categories of employer and nonemployer startup firms include:

- Sole proprietorships, individual proprietorships, are unincorporated businesses owned by an individual and self-employed person.
- Partnerships or unincorporated businesses owned by two or more persons having a shared financial interest in the company.
- Corporations that are legally incorporated businesses under state laws.

The Jobenomics Digital Academy & Business Generator will assist all students in deciding what business structure is best suited for their needs. As part of the aftermarket support program, the Jobenomics Business Generator will help graduates upgrade from sole proprietorships to incorporated firms.

Since digital startups cost significantly less than industrial-era startups, Digital Academies and Digital Startup Business Generators are the obvious choices for underserved and under-resourced communities.

Nonemployers – A Vital, But Neglected, Economic Development Component

Jobenomics asserts that mass-producing nonemployer businesses will mitigate many economic, community, and workforce challenges in underserved and under-resourced urban and rural areas. Unfortunately, most government officials and economic development professionals do not share this assertion since they are preoccupied with large businesses and industrial-age pursuits.

Per the Small Business Administration (SBA) nonemployer business factsheet:

- A nonemployer is a small business that has no paid employees.
- Four in five U.S. businesses are nonemployers.
- Nonemployer firms grew by 72%, from 15.4 million to 26.5 in 2018, whereas the number of employer small businesses has remained relatively constant at 6 million.
- Nonemployer businesses are the primary source of income for 40% of their owners and an additional source for the remaining 60%.
- Nonemployer business owner time spent on working for or managing their business:
    - 30% work full-time or at least 40 hours a week,
    - 20% work between 20 and 40 hours per week, and
    - 50% of nonemployer business owners spend less than 20 hours a week.
- Nearly a third of nonemployers report not needing startup capital. 79% rely on the owner's personal or family savings among those who do. [56]

The SBA factsheet also states that, compared to employer owners, nonemployer business owners are younger and more diverse in terms of race, ethnicity, and gender. **Female, minority and Millennial nonemployer business ownership are significantly higher than employer business ownership**--40% versus 20% for women, 32% versus 18% for minorities, and 16% versus 7% for people under 35 years old. Thus, a nonemployer business generator is a no-brainer for communities concerned about inclusion, diversity, and social mobility.

Nonemployer Statistics (NES) data originate from statistical information obtained through business income tax records that the Internal Revenue Service (IRS) provides to the Census Bureau. These data undergo complex processing, editing, and analytical review at the Census Bureau. The Census Bureau acknowledges that its methodology is subject to "errors" and limited by resources. There is also a lag in IRS filings that cause reporting delays. Hence, 2018 is the most recent year available, which is not ideal for decision-making.

[56] U.S. Small Business Association, Office of Advocacy, A Look at Nonemployer Businesses, https://www.sba.gov/sites/default/files/advocacy/Nonemployer-Fact-Sheet.pdf

To a large extent, these professionals lack an understanding of nonemployer statistics since the seminal monthly Bureau of Labor Statistics Employment Situation reports, and Census Bureau surveys **exclude** nonemployer statistics.

Quoting the Census Bureau, "Due to **their small economic impact**, these firms [*nonemployers*] are **excluded** from most other Census Bureau business statistics, which results in nonemployer business exclusion from government oversight and policymaking." Annual nonemployer sales constitute only $1.3 trillion (4%) of all national sales, which the Bureau deems little consequence economically.[57]

This exclusion is wrongheaded from a Jobenomics perspective since nonemployer establishments are the fastest-growing segment of the U.S. labor force and the answer to beleaguered urban and rural communities.

Furthermore**, it is ignorant to assert that an annual $1.3 trillion economic impact is either small or inconsequential**. If $1.3 trillion is economically trivial, many indispensable industrial sectors are also inconsequential since they have an economic impact below $1.3 trillion. According to the most recent Census Bureau Survey of Business Owners, these "low" economic impact sectors include Transportation & Warehousing (NAICS 48-49), Admin, Support & Waste Management (56), Real Estate & Leasing (53), Accommodation & Food Services (72), Mining, Quarrying, Oil & Gas Extraction (21), Utilities (22), Management of Companies (55), Other Services (81), Educational Services (61), Arts, Entertainment & Recreation (71), and Agriculture, Forestry, Fishing & Hunting (11).[58]

As a percent distribution of employer versus nonemployer establishments, nonemployer businesses make up the majority of the following sectors: agriculture (92%), arts/entertainment (91%), transportation and warehousing (89%), educational services (87%), real estate and leasing (87%), administrative and support services (84%), waste management and remediation (84%), construction (78%), mining and oil/gas extraction (76%), information (70%), healthcare and social assistance (69%), retail trade (65%), finance and insurance (60%), manufacturing (55%), and utilities (52%).

With such extensive participation percentages in these critically important business sectors, it is imperative that government and economic development officials aggressively support and pursue nonemployer business creation. The Jobenomics Digital Academy & Business Generator is ideal since digital economy technologies revamp and transform all these business sectors.

[57] U.S. Census Bureau, Nonemployer Statistics (NES), About this Program, Paragraph 2, https://www.census.gov/programs-surveys/nonemployer-statistics/about.html
[58] [58] U.S. Census Bureau, Survey of Business Owners (SBO) - Survey Results: 2012, https://www.census.gov/library/publications/2012/econ/2012-sbo.html

Sales/Revenues Per Nonemployer Firm Type [59]

Source: U.S. Census Bureau
NES 2018

	Establishments	%	Total Sales/Revenues	Receipts Per Establishment
All Nonemployer Firms	26,485,532	100%	$1,292,866,710,000	$48,814
Unincorporated			**$1.3 Trillion**	
Sole Proprietorships	22,933,726	87%	$816,234,719,000	$35,591
Incorporated				
Partnerships/LLCs	1,950,997	7%	$279,634,433,000	$143,329
S-Corporations	1,199,052	5%	$147,907,284,000	$123,354
C-Corporations	401,757	2%	$49,090,274,000	$122,189

The average receipt per nonemployer establishment was $48,814 in 2018. Total receipts exceeded $1.3 trillion.

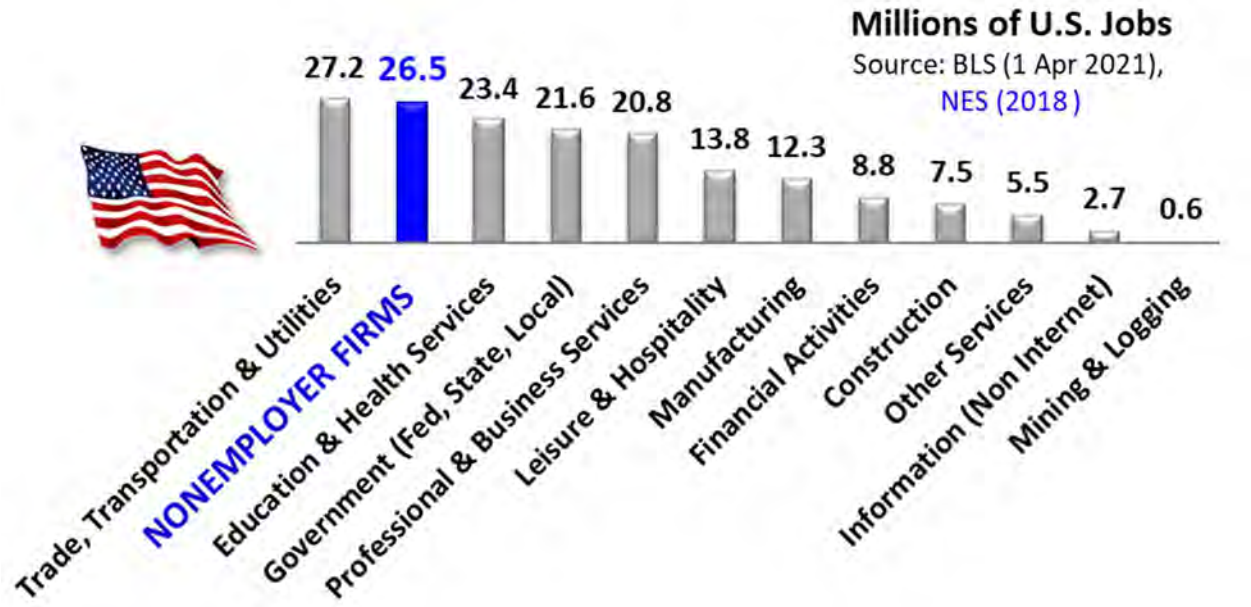
87% of all firms are unincorporated sole proprietorships with one owner who pays personal income tax (IRS Form 1040) on profits earned from the company.

- This group's average receipts (mostly income) are around $35,600 per year, slightly higher than the 2019 U.S. per capita income of $34,103.
- As mentioned earlier by the SBA, 70% of sole proprietorships pursue part-time work, like entry-level workers or the elderly looking for additional income for college or top off their retirement income. So, a potential income stream of $35,600 would be a windfall for many struggling individuals and families.
- Sole proprietorships also include tens of millions of Americans who cobble together incomes (either by choice or necessity) via multiple part-time jobs or task-oriented work.
- From an ethnology (cultural differences) perspective, the digital generation prefers numerous part-time occupations over traditional full-time careers.

13% of all nonemployer firms are LLCs (Limited Liability Companies or partnerships), S-Corporations (a corporation that files company income and losses on personal tax returns), a C-Corporations (a corporation in which the owners, or shareholders, are taxed separately from the entity). This group's average receipts (mostly income) are 4-times higher ($122,189 to $143,329) than the U.S. per capita income.

[59] U.S. Census Bureau, Nonemployer Statistics (NES), NES 2018, TableID: NS1800NONEMP, https://data.census.gov/cedsci/table?d=ANN%20Nonemployer%20Statistics&tid=NONEMP2018.NS1800NONEMP&hidePreview=true.html

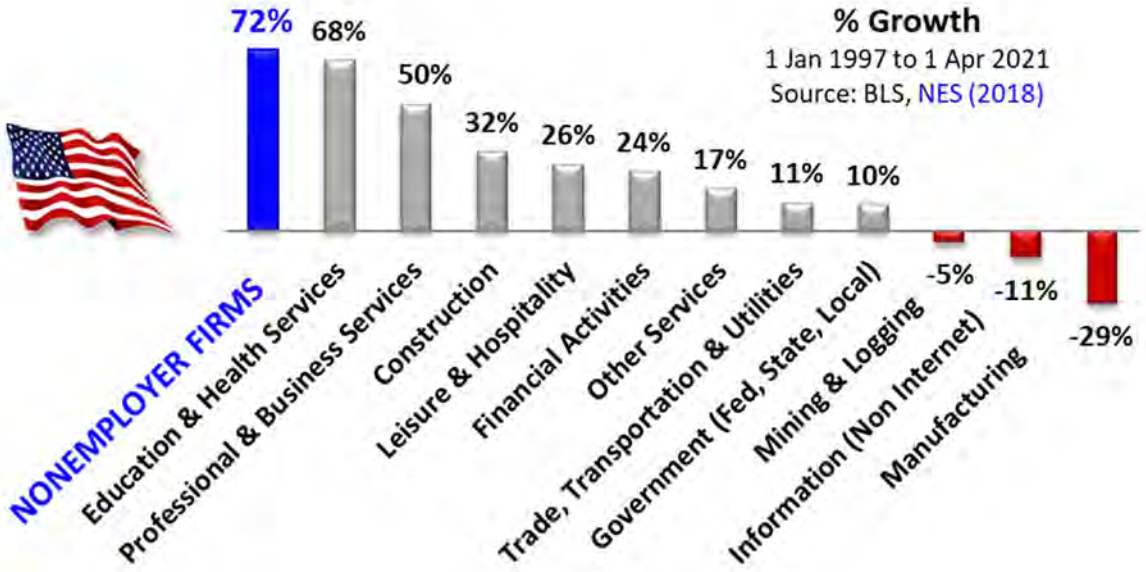
Employees Per Industry Supersector



As reported by the U.S. Bureau of Labor Statistics, compared to the number of employees in the eleven industry and government supersectors, the 26.5 million nonemployer owners (employees) rank second behind the 27.2 million Trade, Transportation & Utilities workers. The combined total employment of the three supersectors in the highly touted U.S. Goods Producing Group (Manufacturing, Construction, and Mining & Logging) is 20.4 million people, or three-quarters the size of the nonemployer population.

Rapid Rise of Nonemployer Business Over the Last Decade

Source: Bureau of Labor Statistics (traditional industries), Census Bureau NES (nonemployers)



This chart measures the growth rate from 1997 to 2021 of employer firms in the eleven primary industry and government supersectors reported by the Bureau of Labor Statistics compared to nonemployer firms as estimated by the Census Bureau's Nonemployer Statistics. Nonemployer firms rank first with a growth rate of 72%. In contrast, U.S. manufacturing employment shrunk by 29% over the same period.

If policymakers spent as much time promoting and incentivizing nonemployers as manufacturing, the United States would have tens of millions more small businesses than today. More importantly, **mass-producing startup nonemployer businesses are vital to restoring financially distressed and beleaguered communities** where big companies fear to go, and small companies struggle to compete against nearby big box stores.

Combined Economic Development & Employment Multiplier Approach

Question: From a workforce impact perspective, which of these startups would you choose, a retail store with 100 employees or an insurance company with 100 employees? **Answer:** An insurance company with an employment multiplier three times greater than a retail store.

Per the Economic Policy Institute's Employment Multiplier database of 20 major industry groups and 179 industries, every 100 insurance company direct jobs create 364 indirect jobs. In contrast, for every 100 direct jobs, a retail store creates only 122 indirect jobs. [60]

An **employment multiplier** measures the economic impact of a startup or closure by estimating direct, indirect, and induced jobs created (or lost) in the area. Direct jobs involve the workers hired to work specifically for the enterprise. Indirect jobs include independent support jobs that assist the enterprise (i.e., subcontractors, independent contractors, freelancers, etc.) and induced jobs created by direct/indirect employees spending in the community.

Most communities use a top-down, property-oriented economic development approach (replete with generous tax breaks and other incentives) to attract macro enterprises. Unfortunately, $100+ million-level opportunities are rare for underserved and under-resourced towns and rural areas.

Rather than going big, Jobenomics recommends mass-producing one thousand smaller **locally-owned**, $100,000+ per year micro and nonemployer firms. Combined, these smaller firms should have a higher economic impact than a single $100-million per year company owned by a

[60] Economic Policy Institute, Updated employment multipliers for the U.S. economy, 23 January 2019, https://www.epi.org/publication/updated-employment-multipliers-for-the-u-s-economy/

nationally-owned entity that furnishes outside management personnel and expropriates community profits.

Economic development efforts that attract large external companies usually lead to gentrification. **Gentrification** changes the character of an under-resourced area through the influx of wealthier institutions or individuals. More often than not, this process displaces poorer residents or relegates them to lower-paid positions and wages. The quest for Amazon's second east coast headquarters (Amazon HQ2) is a good example.

In 2019, dozens of U.S. communities bid for the Amazon HQ2 prize worth 25,000 new jobs with average salaries worth $150,000.[61] Washington DC offered $1 billion worth of incentives. Neighboring Montgomery County (Maryland) offered $8 billion. Crystal City, an urban Arlington County (Virginia) neighborhood with only 23,000 residents, won with a bid of only $250 million.

The primary reason Arlington County defeated Washington DC and Montgomery County with such a low bid was their skilled workforce created by the military-industrial complex supporting the Pentagon (also located in Crystal City).

Top-Down Economic Development Often Gentrifies & Displaces

Washington DC's proposal placed Amazon HQ2 facilities in the most impoverished DC neighborhoods. Had they won, tens of thousands of DC residents would have to sell their homes and move to cheaper areas outside the city. The proposed Amazon HQ2 locations were in Federally-Designated Opportunity Zones (the most 10% distressed areas of all U.S. Census Tracts) neighborhoods (Anacostia and Southwest) in the District of Columbia. Anacostia neighborhood's

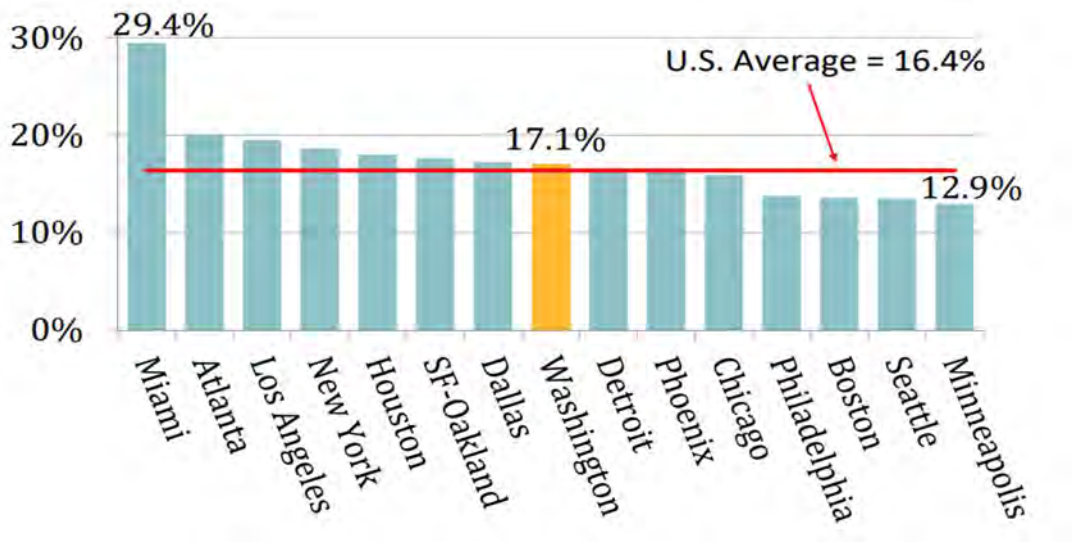
[61] Forbes, Amazon Plans Average Wage Of $150,000, New Virginia Tech Campus And More For Crystal City Expansion, 13 November 2018, https://www.forbes.com/sites/amydobson/2018/11/13/amazons-crystal-city-plans-include-average-wage-of-150000-new-virginia-tech-campus-and-more/?sh=5fec82941fa0

median household income is one-fifth ($14,700, Tract 007401) of the average of all DC Census Tracts ($72,900) and one-sixteenth of the wealthiest area ($235,500, Tract 000901). The Southwest neighborhood ($23,485, Tract 00640) has a similar depressed economic profile.

From a Jobenomics standpoint, the Washington DC HQ2 bid was a failed top-down, property-oriented example of a **gentrified** approach to economic development in the capital city of the United States and the nation's third-richest ($93,800) metropolitan area. Since Washington DC and Montgomery County were willing to commit billions of dollars to underwrite the Amazon HQ2 startup, they should now consider adopting a bottom-up approach to mass-producing locally-owned micro and nonemployer businesses.

Non-Employer Establishment As a Percent of Employment (2016)

Source: The Stephen S. Fuller Institute[62]



According to The Stephen S. Fuller Institute (SFI)[63], nonemployers play an oversize role in the economies of every major city in America, employing an average of 17.1% of all jobs with average receipts of $47,800 in 2016.

Nonemployer firms play a sizable role in the Washington DC region (District of Columbia and the seventeen surrounding Maryland and Northern Virginia counties). According to the SFI 2017 study, the Washington DC region had:

- 526,000 nonemployer establishments, accounting for about three-quarters of all establishments,

[62] Schar School of Policy and Government at George Mason University's The Stephen S. Fuller Institute, Earnings Without a Salary: Trends in Proprietors' Income in the Washington Region, 30 April 2018, http://sfullerinstitute.gmu.edu/wp-content/uploads/2018/04/SFI_Proprietors_Income_043018.pdf

[63] The Stephen S. Fuller Institute is the premier source for information and analysis of Greater Washington's regional economy located at Schar School of Policy and Government at George Mason University, https://sfullerinstitute.gmu.edu/

- Average $54,000 receipts per establishments
    - Receipts exceeded $33 billion, which was more than Department of Defense procurement or earnings from state and local government employment,
    - 10% of all revenues in the Washington metropolitan area.
- Nonemployer firm growth rates (78.4% from 1997 to 2016) significantly outpaced employer establishments (46.9%) and the overall population (34.4%).

In the future, SFI projected that nonemployer businesses would continue outpacing traditional enterprises in terms of wage and employment growth. The principal reason for this optimistic forecast is that digital technologies will rapidly increase the gig/contingent economy.

While nonemployer establishments grew faster than employer establishments, the proportion of nonemployer owners to employees at employer establishments has stayed relatively consistent at around 14% to 17%. In other words, nonemployer establishments with one employee (i.e., the owner) matched the growth of new jobs in traditional employer establishments during the period—a remarkable statistic unknown to most policymakers and decision-leaders across the United States.[64]

Another drawback of the top-down big business approach is collateral damage to neighboring urban and rural communities. Apple's new east coast technology park serves as a good example.

In April 2021, Apple announced that it would build a $1-billion (offset with significant tax and cash incentives) technology park in Raleigh, North Carolina. This park will include 3,000 new direct digital jobs (in machine learning, artificial intelligence, software engineering, and similar fields) with an average annual salary of $187,000.[65]

While this is great for the Raleigh-Durham Research Triangle economy, this new technology park will be a magnet to lure the most talented digital natives away from adjacent urban and rural areas. Unfortunately, competition for today's limited amount of digital talent is a zero-sum game. Prosperous communities get richer at the expense of under-resourced communities that neglect to be proactive.

The good news is that massive economic and workforce development opportunities still lie ahead. For every high-paying direct job created in the Raleigh-Durham Research Triangle, the employment multiplier will generate seven times as many indirect (supplier and induced) jobs. Under-resourced communities need digital academies to compete for these indirect jobs and digital business generators to create locally-owned startups to exploit this enormous business opportunity.

[64] Schar School of Policy and Government at George Mason University's The Stephen S. Fuller Institute, Working Without a Job: Trends in Non-Employer Establishments, 15 November 2017, http://sfullerinstitute.gmu.edu/wp-content/uploads/2017/11/SFI_Non-Employer_Trends_111517.pdf

[65] The News & Observer, 26 April 2021, NC finally lands Apple campus, bringing $1 billion and 3,000 jobs to the state, https://www.newsobserver.com/news/business/article250934144.html

Employment Multiplier Jobs Per 100 Direct Jobs

Source: Economic Policy Institute

Category	Direct Jobs	Supplier Jobs	Induced Jobs	Total Indirect
By Major Industry Group				
Durable Manufacturing (Amazon)	100	*289*	*455*	**744**
Information (Apple)	100	*252*	*321*	**573**
			Average	**659**
By Occupation				
Scientific Research and Development Services (Apple)	100	*519*	*324*	**843**
Data Processing, Hosting, and Related Services (Amazon)	100	*337*	*233*	**570**
			Average	**707**

Per the EPI database, employment multiplies for industries in durable manufacturing, like Apple, and Information, like Apple, average 659 total indirect (supplier and induced) jobs for every 100 direct jobs. On the other hand, research centers and headquarters employ high-paying occupations that average as many as 707 total indirect jobs for every 100 direct jobs. The following charts provide perspective compared to the 20 Major Industry Groups and top and bottom 10 Occupations of 179 EPI-rated occupations.

Employment Multipliers For All 20 Major Industry Groups

1 Direct Job = XX Total Jobs (Direct + Indirect + Induced)

Source: Economic Policy Institute

Employment Multipliers For Top & Bottom Ten Occupations (Out of 179)

The Jobenomics Digital Academy & Business Generator's bottom-up economic development strategy prioritizes industries and occupations with the highest employment multipliers. Since today's digital technologies facilitate global access, remote offices, and telecommuting, Digital Academy & Business Generators will make underserved communities more competitive for direct jobs and, the biggest prize of all, the indirect workforce.

Chapter 4. Jobenomics Community-Based Business Generators

Business startups succeed by satisfying pain points in a scalable way. Without question, the communities with the most pain include beleaguered inner-city neighborhoods and financially distressed rural areas. Numerous communities consider the **Jobenomics Community-Based Business Generator concept** as an ideal way to train, certify, and mass-produce self-employed and independent contractor nonemployer businesses to alleviate poverty and crime pain points. Data shows that for every 1% of startup business growth, poverty and crime are reduced by 2%.

Economic development professionals often create jobs via **business incubators**, **business accelerators**, and **business generators**. Jobenomics endorses all three methods but specializes in business generators.

- Many cities have business incubators, usually located at or around universities or technology parks, and business accelerators associated with mezzanine financing institutions. Business incubators tend to focus on high-tech, silver bullet innovations with extraordinary growth and employment potential.
- Business accelerators usually focus on expanding existing businesses to make them bigger and more profitable. Accelerators offer a range of support services and mezzanine financing opportunities. Startup accelerators support early-stage, growth-driven companies through education, mentorship, and financing. Startup accelerator financing usually involves venture capital in exchange for equity or an ownership stake.
- A Jobenomics Business Generator involves mass-producing micro (employer firms with 1-19 employees) and nonemployer (firms with no employees) firms, emphasizing highly scalable and repeatable businesses in underserved and under-resourced communities.

The Jobenomics Digital Academy & Business Generator Concept

The Jobenomics Digital Academy & Business Generator will utilize the Jobenomics Community-Based Business Generators concept and process. The **initial goal is to mass-produce** approximately 100 new micro-businesses and nonemployer firms per month.

Mass producing 100 digital startups per month will not be difficult. According to James McQuivey, a leading analyst tracking the development of digital disruption, as compared to the traditional economy, a digital economy is at least 100-times easier to create and has 10-times the number of innovators that can innovate at 1/10th the cost. [66]

Digital startups are also much faster to implement than traditional startups, which is an exciting opportunity for those that can capitalize on the momentum of the emerging digital economy.

[66] James McQuivey, Digital Disruption: Unleashing the Next Wave of Innovation, Figure 1-1: Digital Disruption Creates One Hundred Times the Innovation Power, Page 11.

Last but not least, most digital startups provide better-paying, longer-lasting jobs than other startups, contributing more to innovation, productivity, and competitiveness.

Today, incorporating a business, building a website, and providing brochures and business cards takes only a few days. However, this activity is foundational and establishes a business mindset in the new business owner. The Digital Academy will then provide aptitude testing, skills-based training, certifications, and endorsements for this new business owner to take to market. Thus equipped, this fledgling owner can approach potential clients for task-oriented (IRS Form 1099) work or full-time (IRS Form W-2) employment.

This dual 1099/W-2 approach is unique to the Jobenomics Digital Academy & Business Generator program. A person with only a high school level degree and no certified skills will have difficulty landing a job. Since Digital Academy & Business Generator graduates will have business knowledge, endorsements, and certified talents, their chances of obtaining a client interview are greatly enhanced. The dual 1099/W-2 approach gives hiring managers a "try before you buy" option and allows the new business owner to secure multiple 1099 tasks.

According to an Ardent Partner study, from 2009 through 2019, nonemployee contingent labor (self-employed, independent contractors, freelancers, professional services, and traditional temporary workers) working in the Gig Economy skyrocketed from 20% to 43%. In 2019, early 80% of all companies used contingent workers. [67]

The pandemic accelerated the gig/independent/contingent workforce utilization by as much as a decade in 2020-2018, making these citizens the dominant form of U.S. labor. In addition, the digital economy, fueled by a perfect storm of disruptive technologies, will amplify the agile use of task-oriented work from home offices.

Via the Digital Technology Revolution, hiring managers will have on-demand access to a wide variety of skills and a deeper pool of expertise. The demand for digital skills and digital natives (denizens born or brought up during the digital age and innately familiar with digital and network technologies) will continue to accelerate. Companies will seek individuals with current certified skills over those with liberal arts degrees.

[67] Ardent Partners, The State of Contingent Workforce Management 2020, Navigating Disruption and Uncertainty with an Agile Workforce, May 2020, The State of Contingent Workforce Management 2020: Navigating Disruption and Uncertainty with an Agile Workforce by Ardent Partners - Workforce Logiq

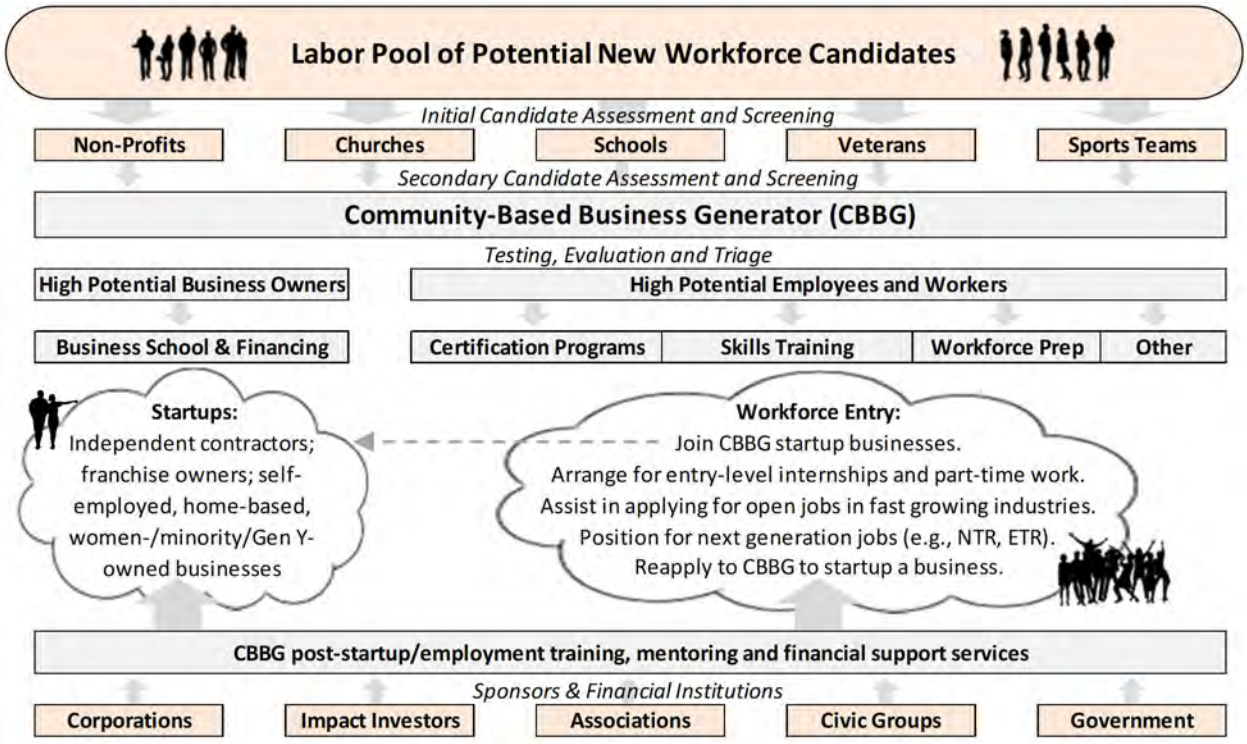
Business Incubators, Accelerators & Generators

Economic development professionals often create jobs via **business incubators**, **business accelerators**, and **business generators**. Jobenomics endorses all three methods but specializes in business generators. Many cities have business incubators, usually located at or around universities or technology parks, and business accelerators associated with mezzanine financing institutions. Jobenomics is working with cities and states to create business generators to mass-produce startup small and self-employed businesses.

Business incubators tend to focus on high-tech, silver bullet innovations with extraordinary growth and employment potential. Conversely, business accelerators focus on expanding existing businesses to make them bigger and more profitable.

Consequently, a Jobenomics Business Generator involves mass-producing micro-businesses (employer firms with 1-19 employees) and nonemployer enterprises (firms with no employees other than the owner or partners).

Jobenomics Community-Based Business Generator Concept



Jobenomics Community-Based Business Generators mass-produce startup businesses by: (1) working with community leaders to identify high-potential business owners and employees, (2) executing a due diligence process to identify potential high-quality business leaders and employees, (3) training and certifying these leaders and employees in targeted occupations, (4) creating highly repeatable and highly scalable "turn-key" small and self-employed businesses, (5)

establishing sources of startup funding, recurring funding and contracts to provide a consistent source of revenue for new businesses after incorporation, and (6) providing mentoring and back-office support services to extend the life span and profitability of businesses created by the Jobenomics Community-Based Business Generators.

The process starts by using community leaders to identify high-potential job seekers. Churches, nonprofit institutions, schools, sports teams, and veterans groups are excellent sources for identifying talent. These institutions provide the first phase of the triage process by screening and assessing high-performance people known to them. The second stage onboarding process involves Jobenomics screening and assessment. Finally, the third stage uses aptitude and personality tests to determine potential career paths.

Once completed, Jobenomics separates candidates into groups for training. The C-Level group (e.g., potential CEOs, COOs, etc.) undergoes management and startup business training. The Management-Level group undergoes skills training based on the role that they will assume in the startup business (operational, technical, mechanical, financial, marketing, administrative, etc.). After the training is completed and certifications awarded, the team will commence startup operations under the guidance and assistance of the Jobenomics Community-Based Business Generator team.

Jobenomics contends that Community-Based Business Generators could also help (**scaleups as opposed to startups**) existing firms and reduce the rate of contracting and closing businesses.

Starting with a potential pool of thousands of candidates, Jobenomics will work with local civic organizations (churches, nonprofits, sports teams, etc.) to identify and nominate and endorse candidates, who they know, for the Jobenomics Community-Based Business Generator program. This nomination process is the first stage of the due diligence process.

Aptitude tests will identify and assist (1) those that need other educational (GED and postsecondary) or training (vocational) centers for career development, (2) those that are qualified and suitable for immediate employment with existing companies, and (3) those that desire and have an aptitude for starting a small or self-employed business. Thus, Jobenomics Community-Based Business Generator will help all people who enter the program find meaningful employment and career paths.

Jobenomics envisions that approximately one-half of the nominees would seek a traditional education or employment by existing companies. The other half would pursue a more independent and self-sufficient route offered by a small business startup or self-employment.

Of the 50% that choose the Jobenomics Community-Based Business Generator training and certification process, Jobenomics anticipates that approximately 25% will eventually implement a small business startup or a self-employed business. In addition, the 75% who undergo the Jobenomics Community-Based Business Generator process will be certified (with empirical data by professional testing and evaluation) as high-quality candidates for immediate employment or traditional education/vocational training.

Many initial candidates are likely to prefer working for existing companies rather than the Jobenomics process. Anticipating this, Jobenomics will implement a "pipeline" to connect these individuals who have undergone some due diligence to hiring companies. Consequently, the Jobenomics management team includes a nationally recognized leader who developed a pipeline system that has matched 250,000 veterans with companies. This system is ideally suited for matching Jobenomics candidates to local employment vacancies.

The overall objective is to mass-produce small and self-employed businesses, making the Jobenomics Community-Based Business Generator process unique as a traditional business and workforce development center. Traditional workforce development processes focus on preparing potential workers for employment by existing businesses—usually large corporations. However, for marginalized individuals, at the base of the American economic pyramid (especially those in depressed urban and rural areas), the odds of employment at existing businesses are slim, as evidenced by the long lines at traditional job fairs versus the low percentage of people hired.

The Jobenomics process focuses on preparing workers for starting a business or using the experience to be more competitive to get a job. In today's world, gainful employment is challenging and oriented to those currently employed, credentialed, or high-skilled. Conversely, a common complaint that Jobenomics often hears from companies is that they have a tough time

(1) finding good people who want to work, (2) who have the right attitudes and aptitude for work, and (3) who have workforce credentials, experience or related skills.

Every nominee that enters the Jobenomics process will set up a self-employed business within days and undergo elementary business training. Setting up a small business is to make them more competitive in today's job market. Many employers prefer to "try before they buy." An incorporated self-employed individual can position themselves for subcontract or contingent work (1099) as a prelude to standard full-time work (W2). Even if a self-employed individual never receives an income from a self-employed business, individuals can present themselves with credentials (Employer ID Number, website, business card, and skills resume) that align with the business community. In addition, Jobenomics will provide additional credentials regarding the individual's workforce aptitude, skills, and suitability tailored to the specific hiring opportunity. Jobenomics credentialing and letters of recommendation from the nominees' sponsoring organization will distinguish the individual from the masses of unemployed or new or returning workforce entrants.

Today, the United States does not have standardized national, state, or local processes to create or mass-produce startup businesses. The U.S. startup process is essentially ad hoc. By instituting a community-based (all jobs are local) standardized, repeatable and scalable process to mass-produce startup businesses, millions of new establishments could be created across America. By being part of a small business team, team members will be motivated to grow the company to make it more profitable, facilitating upward mobility, higher wages, better benefits, potential equity positions, and, perhaps most importantly, a sense of camaraderie and purpose.

Job creation is the number one issue facing the U.S. regarding economic growth, sustainment, and prosperity. Yet, jobs do not create jobs; businesses do.

Unfortunately, the United States focuses primarily on big business and government employment solutions that have not effectively grown the U.S. labor force. The U.S. labor force is in a state of decline, as evidenced by the eroding middle-class and the transformation from standard full-time to part-time and contingency workers. Jobenomics forecasts that the contingent workforce will replace the traditional full-time workforce as the dominant labor force in the United States in the next fifteen years. This trend is mainly unknown to policymakers and the American public.

Jobenomics asserts that the four demographics with the highest need and growth potential include women, minorities, new workforce entrants, and the large cadre of financially distressed citizens who want to work or start a business. These demographics are ideal for accommodating the growing contingent workforce and attracting new labor force entrants that often do not share the same employment dream of older generations.

Jobenomics believes that new small, emerging, and self-employed businesses could create 20 million new jobs if adequately incentivized and supported within a decade. Notwithstanding filling the millions of open U.S. job positions, the emerging Energy Technology Revolution (ETR) and the Network Technology Revolution (NTR) could create 20 million net new American jobs within a decade, given proper leadership and support.

Using the Jobenomics Community-Based Business Generator process of mass-producing highly repeatable and scalable small and self-employed businesses, the United States could transform the U.S. labor force and provide hope for marginalized American communities.

Chapter 5. Jobenomics Digital Academy & Business Generator Program

The Jobenomics Digital Academy & Business Generator consists of a combined entrepreneurial and enterprise center to exploit career and business opportunities afforded by the dramatic rise in the digital economy. The primary purpose of the Digital Academy is to attract, assess, coach, train, and certify candidates in digital technologies via a lifelong applied learning and transformation mapping process. The Jobenomics Business Generator uses the Jobenomics Community-Based Business Generator process to mass-produce startup firms (e.g., around one hundred new nonemployer firms and micro-businesses per year) in underserved and under-resourced communities. This center will also include a training and computer center, startup offices, conference room, Entrepreneur Club, and cafe.

Jobenomics Digital Academy & Business Generator Overview

The Jobenomics Digital Academy & Business Generator focuses on identifying, training, and certifying individuals and mass-producing startup nonemployer firms (firms with no "paid" employees) and micro-businesses (less than 20 employees) that can thrive in the digital economy.

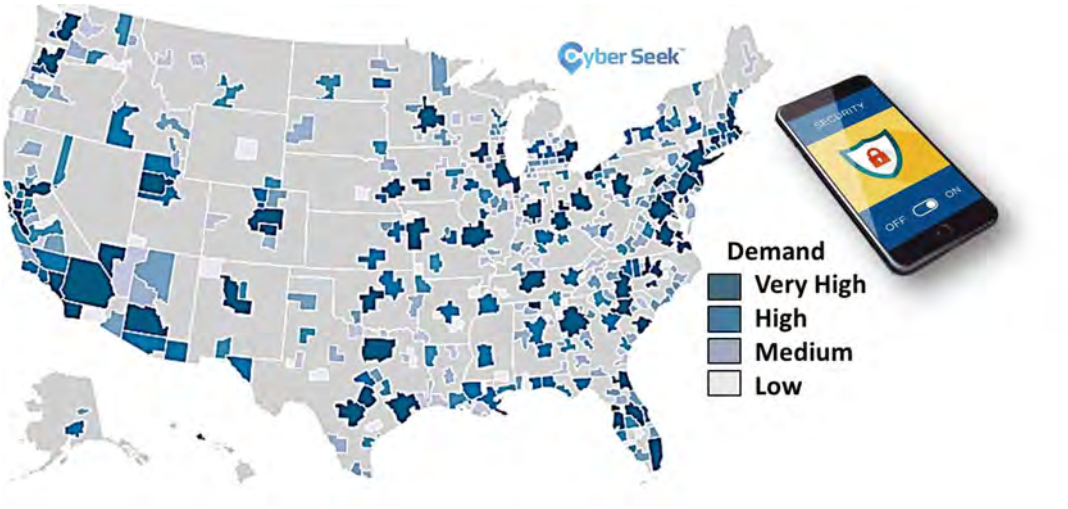
The “Digital Economy” is an economy based on digital and networked technologies preempting today's traditional industrial-based economy. As depicted, at least nine unique but intertwined ecosystems define the emerging Digital Economy. These categories will generate tens of millions of new career opportunities across the entire business spectrum, covered in the 200-page Jobenomics Emerging Digital Economy e-book that is too expansive to address in detail in this document. Accordingly, we will limit this discussion to some of the typical areas that the Jobenomics Digital Academy & Business Generator intends to pursue.

For the underprivileged, unskilled, and poorly educated, certified skills-based training provides the most effective way to get a good job, the first step towards a meaningful career. Certified skills-based training is also preferable for entrepreneurs to start micro and nonemployer businesses in the burgeoning digital economy.

Certification Roadmaps

Certified training programs are the gateway to good-paying entry-level digital economy jobs without a college degree. For example, the Jobenomics Washington DC chapter has a six-month cybersecurity program that trains and certifies disadvantaged African-American youths for $50,000/year for non-technical entry-level information security jobs (operations, maintenance, admin, etc.).

U.S. Metro Area Cybersecurity Locations



The depicted Cyber Seek interactive "heat map" shows that U.S. metro areas have a very high demand for skilled information security workers. As of May 2021, the United States has 956,341 employed cybersecurity workers with 464,420 open positions, of which approximately one-third are non-technical administration, operational, investigative, and maintenance jobs. Nine out of ten of these jobs are in the private sector. The heat map allows users to drill down by state and metro areas.

Cyberseek also provides an interactive career pathway that shows key jobs within cybersecurity, transition opportunities between them, and detailed information about the salaries, credentials, and skillsets associated with each role. For instance, there are currently 196,569 open IT Support positions; half (98,285) do not require a college degree. These are several certified skills-based training tools available to the Jobenomics Digital Academy & Business Generator. [68]

Certified skills-based training begins with industry service providers including CompTIA, Microsoft, Google, AWS, Redhat, Cisco, VMWare, IBM, and a host of specialty providers, such as Bridging Cyber, collaborating on Jobenomics minority cybersecurity certified skills-based training.

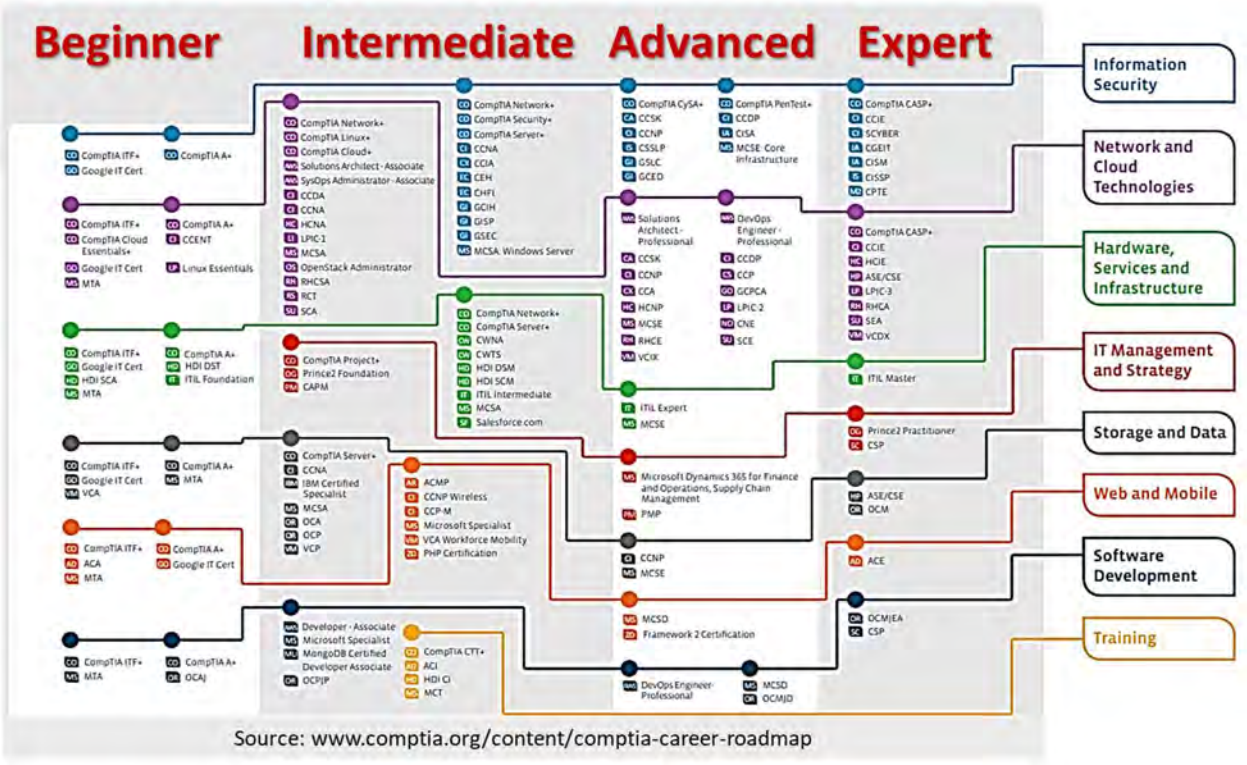
[68] Cyber Seek, Cybersecurity Supply/Demand Heat Map, retrieved 25 May 2021, https://www.cyberseek.org/heatmap.html, and Cybersecurity Career Pathway, https://www.cyberseek.org/pathway.html

Established in 1982 in Illinois, the nonprofit Computing Technology Industry Association (CompTIA) is considered one of the world's top companies in the $5 trillion global information technology ecosystem. As projected by CompTIA analysts, net tech employment in the United States totals 12.4 million jobs, with 245,500 new jobs in 2021.

CompTIA provides digital toolkits for the estimated 75 million industry and tech professionals who design, implement, manage and safeguard the technology that powers the world's economy.

CompTIA promotes industry growth through education, training, certifications, philanthropy, and market research. These activities develop highly skilled workforces and provide an inclusive innovation environment for the global tech workforce. CompTIA has awarded over 2.5 million certifications in cybersecurity, networking, cloud computing, technical support, and other digital technologies.

CompTIA IT Certification Roadmap



This map is the CompTIA IT Certification Roadmap, an example that Jobenomics Digital Academy will use. [69] As depicted on the right side of the map, eight primary certification paths (from information technology to training) with four levels of proficiency (beginner to expert) lead to well-paying careers in the digital economy. The numerous multi-colored bullet-points represent the certifications required to obtain the necessary credentials for each level of proficiency.

[69] CompTIA, IT Certification Roadmap, https://certification.comptia.org/docs/default-source/downloadablefiles/it-certification-roadmap

Jobenonomics recommends the IT Support Specialist career path for most working-age adults who use the internet every day but don't have the digital literacy needed to work in the digital economy.

IT Support Specialist Salary Potential

Occupation	Location	10th Percentile Salary	25th Percentile Salary	Annual Median Salary	75th Percentile Salary	90th Percentile Salary
IT Support Specialist	United States	$32,330	$40,340	$52,270	$68,060	$88,470
	Washington DC Metro	**$46,310**	$56,310	$68,240	$83,260	**$102,290**
	North Carolina	$31,630	$39,100	$49,220	$62,280	$79,030
	Raleigh	**$29,090**	$39,580	$52,770	$65,730	**$81,910**
	North Dakota	$27,940	$35,260	$45,920	$57,930	$72,030
	Fargo	**$28,320**	$34,510	$44,430	$56,180	**$70,010**

This table shows the IT Support Specialist wage scale from lowest to highest in three different locations in the United States. The yellow highlighted figures depict the entry-level wages (10th percentile) for beginners to the highest (90th percentile) for experts. Other than the Washington DC Metro, entry-level salaries are in the $30K range with a maximum of $70K to $100K. To obtain your state and metropolitan salary data, use the interactive CompTIA Salary Calculator.[70]

CompTIA Salary Calculator

IT Support Specialist	Beginner	Intermediate	Advanced
Job Postings	**83,804**	53,536	11,093
Median Annual Salary	**$39,885**	$47,657	$59,234
Certificates Required	**3**	4	4
IT Networking Specialist	**Beginner**	**Intermediate**	**Advanced**
Job Postings	**23,239**	56,666	28,555
Median Annual Salary	**$61,294**	$74,304	$85,053
Certificates Required	**5**	11	8
Data Specialist	**Beginner**	**Intermediate**	**Advanced**
Job Postings	**19,212**	29,789	10,478
Median Annual Salary	**$63,076**	$78,110	$90,652
Certificates Required	**3**	4	4
Cybersecurity Specialist Specialist	**Beginner**	**Intermediate**	**Advanced**
Job Postings	**18,709**	53,739	44,331
Median Annual Salary	**$80,251**	$94,379	$105,033
Certificates Required	**2**	6	2
Software & Web Developer	**Beginner**	**Intermediate**	**Advanced**
Job Postings	**135,301**	339,322	223,761
Median Annual Salary	**$81,323**	$98,849	$107,037
Certificates Required	**4**	6	6

[70] CompTIA, Calculate Your Potential IT Salary, https://www.comptia.org/content/it-salary-calculator

This expanded table shows CompTIA's IT career path planning tool from beginner to intermediate to advanced IT jobs within five categories.[71] According to this planning tool, there are 280,265 open positions for beginners. The average yearly salary of all five beginner job categories is $65,166, ranging from a low of $39,885 for an IT Support Specialist to a high of $81,323 for a Software & Web Developer. The number of certificates required to land each job ranges from two to four.

The logical next question is how much does a certificate cost? The short answer is only hundreds of dollars.[72]

As an illustration, to obtain an entry-level job as an IT Support Specialist, these three certifications are required: CompTIA IT Fundamentals, CompTIA A+ Core 1, and CompTIA A+ Core 2. CompTIA IT Fundamentals helps professionals decide if a career in IT is right for them or to develop a broader understanding of IT. CompTIA A+ is the industry standard for launching IT careers into today's digital world. The CompTIA A+ Core Series requires candidates to pass two exams

To take the CompTIA A+ certification test, the cost of an exam voucher is only $232. If you don't pass an exam, you'll need to buy another exam voucher. Most people purchase "bundles." The Basic Bundle costs $349 and includes two vouchers and an e-book. The Exam Prep Bundle adds a CertMaster Practice tool ($449) to prepare for the exam. The eLearning Bundle ($649) includes CertMaster Learn, which combines instructional lessons with assessments, videos, and performance-based questions to help you prepare for the certification exam and career in IT.

If a student three eLearning Bundles ($649) for all three certifications (including vouchers for six potential exams), the total cost would be $1,947—a very reasonable about of money compared to a degree-based education.

On the surface, the CompTIA certification process seems straightforward. However, nothing is easy for new workforce entrants who have little or no clue about career paths, job opportunities, or skills-based training and certification programs. Thus, Jobenomics Digital Academy & Business Generators are needed to simplify this straightforward process in the following ways:

- Arranging for government or private sector financing to assist the student through the entire certification-job-career-startup business development process,
- Guiding students through the maze of different service providers and career choices,
- Providing information technology labs, conference facilities, study areas, and

[71] CompTIA, Plot Your Next Move with the New CompTIA Career Roadmap, https://www.comptia.org/blog/comptia-career-roadmap#:~:text=The%20roadmap%20shows%20you%20all,support%2C%20IT%20networking%20and%20cybersecurity.

[72] CompTIA, How Much Does the CompTIA A+ Certification Cost?, https://www.comptia.org/faq/a/how-much-does-the-a-plus-certification-cost

- Conducting one-on-one and group instruction to sherpa, chaperon, council, or coach students and graduates.

E-Commerce Opportunities

E-Commerce involves the digital transaction of **goods** and **services** done over the internet via purchasing an item or service online with an electronic payment method (credit or debit card or a digital wallet service).

According to IBISWorld, the E-Commerce & Online Auctions Industry employed **662,600 Americans in 2021,** which grew 10.9% annually over the last five years. IBISWorld also states that the average U.S. E-Commerce & Online Auctions business has 2.5 employees—a micro business. Therefore, dividing 662,600 by 2.5 employees per business equates to approximately **265,000 U.S. microbusinesses**. [73] [74]

E-commerce is most often associated with goods (e-retailing or e-tailing, instead of traditional retailing). However, online services sales (like consulting, tutoring, transportation, and real estate) are also booming. Unlike most industrial age merchandising, e-commerce is a hybrid of five business models: B2C, B2B, B2G, C2B, and C2C.

- **Business-to-Consumer** (B2C) is the most common business model that sells products and services directly to consumers online. The most widely advertised and followed B2C statistics are total retail e-commerce sales, the percent change of retail e-commerce sales from the previous year, and the percent of e-commerce retail sales of total retail sales. Here is a snapshot of these statistics in 2020: [75]
    - Total retail sales: Worldwide = $23.7 trillion, USA = $5.6 trillion
    - Total e-commerce retail sales: Worldwide = $4.2 trillion, USA = $0.8 trillion
    - % e-commerce retail sales of total: Worldwide = 12.2%, USA = 14.4%
    - % e-commerce change from 2019: Worldwide = 25.7%, USA = 32.4%, Mexico = 62.5%, Canada = 75.0%, and Argentina = 100.6% (world's highest growth)

[73] IBISWorld, Industry Statistics - United States, E-Commerce & Online Auctions in the US - Employment Statistics 2005–2026, Updated 8 December 2020, https://www.ibisworld.com/industry-statistics/employment/e-commerce-online-auctions-united-states/#:~:text=There%20are%20662%2C600%20people%20employed,the%20US%20as%20of%202021.

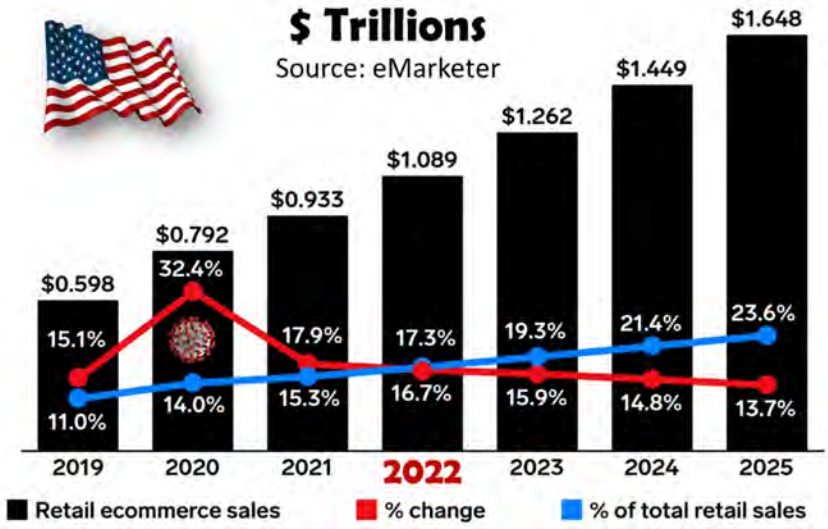
[74] Note: Online Auctions offer buyers and sellers a wide variety of goods an enormous platform for trade, akin to a giant digital fleamarket. eBay started as an online auction firm but is now a massive e-commerce platform company.

[75] eMarketer, U.S. Total Retail & Retail E-Commerce Sales, 2019-2025, May 2021, https://www.emarketer.com/content/global-ecommerce-2020, and https://www.emarketer.com/content/us-ecommerce-forecast-revised-upward-18-growth-expected-2021?ecid=NL1014

U.S. Retail E-Commerce Economy

$ Trillions and % of Total Retail Sales

Source: eMarketer[76]



eMarketer forecasts that U.S. retail e-commerce sales will reach $1.64 trillion and account for 23.6% of all B2C sales in the USA by 2025. The pandemic accelerated the shift to U.S. online consumption in ways that didn't seem possible.

- **Business-to-Business** (B2B) is a business model that sells products or services to another business that often resells the same product or service to a consumer. B2B e-commerce refers to exchanging goods and services via online platforms.

  Since many B2B transactions support every B2C undertaking (e.g., complex commodity, production, logistics, and supply chain transactions for goods and services), the B2B market is more extensive than B2C. Forrester forecasts that U.S. B2B eCommerce sales will reach $1.8 trillion and account for 17% of all B2B sales in the U.S. by 2023.[77] Statista estimates total U.S. B2B e-commerce volume to be around $7 trillion.

- **Business-to-Government** (B2G) sells products and services to government (federal, state, local) agencies.

- **Consumer-to- Business** (C2B) allows individuals to sell goods and services to companies.

- **Consumer-to-Consumer** (C2C), also called an online marketplace, connects consumers to exchange goods and services and typically makes their money by charging transaction or listing fees.

[76] eMarketer, US retail ecommerce sales continue to climb toward $1 trillion, 16 July 2021, https://www.emarketer.com/content/us-retail-ecommerce-sales-continue-climb-toward-1-trillion

[77] Forrester, US B2B eCommerce Will Hit $1.8 Trillion By 2023, 28 January 2019, https://www.forrester.com/report/US+B2B+eCommerce+Will+Hit+12+Trillion+By+2021/-/E-RES136173

Some of the innovations associated with e-commerce include:

- **Dropshipping** is an order fulfillment method that does not require local businesses to keep products in stock. Due to increased online advertising and cheap mall space costs, many pure-play online retailers (such as Warby Parker, Untuckit, Everlane, and Casper Sleep) are now opening hybrid "popup stores" and outlets with limited or no onsite inventory.
- **Direct-to-Consumer** (D2C) is a strategy in which a company promotes and sells a product or service directly to consumers, cutting out the need for intermediaries. Millennials, the largest U.S. demographic, prefers D2C over B2C because of its lower cost and customization.
- **White labeling** allows customers to affix their brand to products. For example, Whole Foods Market has a "365 Everyday Value" line of products. Walmart uses the "Great Value" brand for grocery products and "George" for apparel.
- **Subscription services** is an online business model in which a company provides ongoing services regularly in exchange for regular payments from the customer. For example, Netflix had 208 million paid subscribers worldwide in the first quarter of 2021. Over one-quarter of American adults now use subscription e-commerce to regularly schedule consumable product delivery to homes and offices.

Over the last two decades, e-commerce has **revolutionized and disrupted** the retail industry, the second largest industry sector employing 15,210,000 people (healthcare is the largest with 15,950,000) as of May 2021. Per the Bureau of Labor Statistics, the U.S. retail industry is 24% larger than the entire, highly-touted U.S. manufacturing sector, with only 12,284,000 employees.

The COVID pandemic accelerated the highly-publicized "retail apocalypse" of closed retail stores. As a result, retailers, primarily small businesses, closed a record 12,200 U.S. retail stores in 2020. On the other hand, new e-commerce innovations and business models resurrected the retail industry. This rejuvenated industry sector is better suited and competitive for the emerging global digital economy.

Top-10 U.S. Retail E-Commerce Companies

Top 10	Market Share 2021 Q2
Amazon	41.4%
Walmart	7.2%
eBay	4.3%
Apple	3.8%
Home Depot	2.3%
Target	2.0%
Best Buy	1.9%
Costco	1.6%
Kroger	1.6%
Wayfair	1.5%
All Others	32.4%

Top 10	Market Share 2020
Amazon	38.7%
Walmart	5.3%
eBay	4.7%
Apple	3.7%
Home Depot	1.7%
Wayfair	1.5%
Best Buy	1.3%
Target	1.2%
Costco	1.2%
Macy's	1.1%
All Others	39.6%

Top 10	Market Share 2019
Amazon	47.0%
eBay	6.1%
Walmart	4.6%
Apple	3.8%
Home Depot	1.7%
Best Buy	1.3%
Macy's	1.2%
Quarate	1.3%
Costco	1.3%
Wayfair	1.3%
All Others	30.4%

According to eMarketer, the Top-10 U.S. e-commerce companies, ranked by retail e-commerce shares as a percent of total U.S. retail commerce sales over the last three, control 60% to 70% of the total online and offline retail market. Amazon is overwhelmingly the titan in the group, but smaller online sellers are growing (highlighted in green). It is also important to note that smaller and new firms control 30% to 40% of this rapidly growing business sector, supporting 10s of millions of new jobs and millions of micro and nonemployer businesses.

E-commerce companies concentrate on transaction histories of big data sets relative to products and services bought by consumers and merchants. E-commerce companies extract marketable data via data mining and predictive analytics.

- Data mining involves using advanced algorithms to analyze large databases and summarizing this data for use or sale. Within data mining, machine learning models and algorithms lend themselves to predictive analytics that analyzes current and historical facts to anticipate future or otherwise unknown events.
- Predictive analytics is the branch of advanced analytics to analyze current data to predict future events. Predictive analytics blends techniques from statistics, modeling, machine learning, and artificial intelligence to produce a wide variety of metrics, including customer engagement (signups, visits, page views, opens and clicks, downloads and orders, etc.), customer loyalty (frequency, recency, value, etc.), acquisitions (mobile phone rates, social media rates, pop-up success, growth per channel, etc.) and revenue (per campaign and email, average order value, payment over time, etc.).

U.S. Total Retail & Retail E-Commerce Sales, 2019-2025

Source: eMarketer, May 2021, Billions[78]

	2019	2020	2021	2022	2023	2024	2025	
Total Retail Sales	$5,452	$5,637	$6,083	$6,314	$6,535	$6,764	$6,994	
YoY Growth		3.4%	7.9%	3.8%	3.5%	3.5%	3.4%	Average
Non-E-Commerce Retail Sales	$4,854	$4,846	$5,149	$5,225	$5,272	$5,314	$5,346	2020-25
YoY Growth		**-0.2%**	6.3%	1.5%	0.9%	0.8%	**0.6%**	**1.6%**
E-Commerce Retail Sales	$598	$791	$933	$1,089	$1,262	$1,449	$1,648	**(11-to-1)**
YoY Growth		**32.3%**	18.0%	16.7%	15.9%	14.8%	**13.7%**	**18.6%**
E-Commerce % of Total	11.0%	14.0%	15.3%	17.3%	19.3%	21.4%	23.6%	

Source: eMarketer, May 2021 **(23-to-1)**

According to eMarketer, Jobenomics' primary source for digital retail marketing statistics, in pandemically driven 2020, total retail sales were $5,637 billion ($5.6 trillion). U.S. e-commerce sales were $791 billion, or 14% of the total. U.S. e-commerce year-over-year growth was an **astounding 32.3%**, mainly due to stay-at-home orders. These restrictions stymied in-store retail (non-e-commerce) sales to a negative (**-0.2%**) growth rate from the prior year.

[78] eMarketer, U.S. Total Retail & Retail E-Commerce Sales, 2019-2025, May 2021, https://www.emarketer.com/content/us-ecommerce-forecast-revised-upward-18-growth-expected-2021?ecid=NL1014

As the United States slowly returned to normal as the pandemic winds down in 2021, U.S. YoY e-commerce sales will decrease to 18.0%, and in-store sales will bounce back to $6.3% due to pent-up demand. Looking forward to 2025, experts predict e-commerce sales will rise to 23.6% of total retail sales, and in-store sales will remain relatively flat.

The annual e-commerce retail sales growth from 2020 through 2025 will outpace its non-e-commerce counterpart by **11-to-1** (18.6% compared to 1.6% YoY growth). In 2025, this ratio is estimated to reach **23-to-1** (13.7% versus 0.6%). Consequently, e-commerce is on track to become the dominant way Americans purchase goods and services somewhere in the 2030s. The Digital Academy will prepare our people for this transition.

China's retail e-commerce economy is currently three times larger than the United States and forecast to outpace future U.S. e-commerce growth. With almost 800 million (one-third of the global) digital buyers, China will produce $2,779 billion (57% of the worldwide total) in e-commerce sales in 2021. [79] This year, China became the first country to transact over half of its retail sales (52%) online. [80]

Achieving e-commerce mastery gives the Chinese economic hegemony the borderless global retail market. This power will allow a foreign nation to influence America's $5 trillion retail trade (online and in-store) marketplace and significantly impact the 15.2 million Americans who have jobs in this sector.

To compete effectively in the rapidly changing retail/e-tail ecosystem, the United States needs more digitally skilled workers to help **small businesses and third-party suppliers** access global product and service opportunities. More than 50% of all Amazon sales come from third-party sellers. The same is true with China's top ten e-tailers: Tobabao/Alibaba (450 million monthly visits), JD.com (200 million), Tmall/Alibaba (150 million), Alibaba1688 (50 million), plus Suning.com, Xiaohongshu, Amazon China, Vipshop, Dangdang, and Kongfz.com (200 million).[81] Yet, most Americans have never heard of these e-commerce sites that present tremendous unexploited opportunities.

An advanced website is required to access these e-commerce portals as a new third-party supplier of goods or services. The most advanced website is an artificially intelligent **semantic** website that interprets "meaning" using **natural language processing, speech recognition algorithms,** and **predictive analytics.**

Original websites (Web 1.0) consisted of non-semantic, **read-only** websites focused on data retrieval. Today's Web 2.0 websites are semi-semantic, **read-write** websites that facilitate data

[79] eMarketer, How will the pandemic affect US ecommerce sales in 2021?, 17 May 2021, emarketer.com/content/how-will-pandemic-affect-us-ecommerce-sales-2021?ecid=NL1016
[80] eMarketer, Global Ecommerce Update 2021, Worldwide Ecommerce Will Approach $5 Trillion This Year, 13 January 2021, https://www.emarketer.com/content/global-ecommerce-update-2021
[81] Disfold, Top 10 e-commerce sites in China 2020, https://disfold.com/top-e-commerce-sites-china/

sharing, as evidenced by social media (Facebook, Twitter, etc.) and blogging. Finally, web 3.0 will be fully semantic, **read-write-execute** websites.

Web 3.0 browsers will perform functions for humans in merged virtual/physical worlds. Machine learning will teach conversational chatbots (like Siri, Alexa, Cortana) to function more like human assistants who know their master's preferences. Eventually, avatars will be the user's alter ego in the virtual world. Via mobile wearable devices, mixed reality systems, and avatars, bots will become companions and sherpas who accompany and guide their users in the physical world.

The United States has around 700,000 app developers and 7,000 app development companies, representing a significant proportion of the U.S. labor force. However, the App Economy is giving way to a Bot Economy, also known euphemistically as the Conversational Economy. An internet bot is a software algorithm designed to automate a specific task. For example, an AI-driven chatbot, or chatterbot, is an interactive application that simulates a conversation to deliver text- or voice- or video-based information to a user via a networked device. According to the Institute for Robotic Process Automation, bot development takes about one-fourth of the time to build a standard mobile app and one-half as expensive to build and maintain. [82]

Bots are rapidly replacing apps. Becoming a bot developer is now easier than app developers faced a decade ago. Bot startups are more effortless because bot development is automated, and the bot demand is soaring. Free and paid bot development platforms are often straightforward, using simple drag and drop commands. Chatbots Journal provides a brief description of the Top-30 popular platforms for chatbot development.[83] These platforms make it relatively uncomplicated to start as a part or full-time employee or contractor.

Other than starting your e-commerce B2C/B2B/B2G/C2B/C2C startup or joining the world of e-commerce bot developers, there are hundreds of other digital business career paths. The Jobenomics Digital Academy & Business Generator will conduct E-Commerce 101 lectures and assessment tests to help students evaluate potential opportunities within this massive business sector. The student will then take some beginner courses and entry-level certification.

Many companies specialize in finding digital economy courseware. For example, Digital Defynd (a database of 78,530 courses[84]) recommends these (free) courses if working with the e-commerce giant Amazon is of interest:[85]

- Sell on Amazon by Seller University (Amazon)
- Amazon Fulfillment by Amazon (FBA) Course – How to Sell on Amazon (Udemy)
- How to Start an Amazon FBA Store on a Tight Budget (Udemy)
- Advanced: Make and Sell Custom Shirts Using Merch by Amazon (Udemy)

[82] Crosby, https://crosby.pana.com/

[83] Chatbots Journal, Top 30 Popular Platforms For Chatbot Development, 14 July 2020, https://chatbotsjournal.com/top-30-powerful-and-best-platforms-to-build-chatbots-bf413419d584

[84] Digital Defynd, https://digitaldefynd.com/

[85] Digital Defynd, 6 Best + Free Amazon Sales Courses & Classes, May 2021, https://digitaldefynd.com/best-amazon-selling-courses/, and All Courses,

- 2020: Amazon SEO, Amazon Sales & Ads (Udemy)
- The Ultimate Guide to Sell on Amazon FBA (Udemy)

The recommended Digital Defynd free e-commerce digital marketing courses and training list is:[86]

- The Complete Digital Marketing Course – 12 Courses in 1 (Udemy)
- Digital Marketing Masterclass 2018 – 23 Courses in 1 (Udemy)
- Digital Marketing Strategies (Kellogg School of Management)
- Digital Marketing Training Certification by University of Illinois (Coursera)
- Free Digital Marketing Training on Skillshare (Skillshare)
- Product Strategy (Kellog School of Management)
- Digital Marketing Masterclass: Get Your First 1,000 Customers (Udemy)
- Become a Digital Marketing Specialist (LinkedIn Learning)
- Ultimate Google AdWords Course 2017–Stop SEO & Win With PPC (Udemy)
- Facebook Ads & Facebook Marketing Mastery Guide 2018 (Udemy)
- How To Generate Leads & Sales With Facebook Ads (Udemy)
- Social Media Marketing 2018 – Learn PPC on 10+ Platforms (Udemy)
- Social Media Marketing For Beginners 2018 Marketing Strategy (Udemy)

Here is a list of e-commerce beginner courses and certs recommended by Reliablesoft (a Digital Marketing Services company):[87]

- eCommerce SEO Course (Reliablesoft)
- eCommerce Marketing Course (Hubspot)
- eCommerce 2020 Course (Udemy)
- How to Get a Business Online (Google)
- eCommerce Essentials (SkillShare)
- eCommerce Fundamentals (LinkedIn Learning)
- How to Create an eCommerce Store (Udemy)
- Certified eCommerce Marketing Specialist (Digital Marketer)
- eCommerce Email Marketing (Shopify)
- Google Marketing Platform (Google)

See the footnotes below for more information on all of the certification courses listed above. Most of these certifications are free. Many all take less than one day to complete. While completing a one-day certified course will not land a job, it will provide student insight—the first step along a career pathway. It is also a bullet-point on the list of professional certifications on the student's startup business website and personal biography. Furthermore, taking a few Amazon and Google courses is a great way to get a job interview or business meeting at these giant organizations.

[86] Digital Defynd, 12 Best + Free Digital Marketing Courses & Training, May 2021 Updated, https://digitaldefynd.com/best-digital-marketing-course-training-tutorial/
[87] Reliablesoft.net, The 10 Best eCommerce Courses & Certifications (Free & Paid) https://www.reliablesoft.net/best-ecommerce-courses/

Internet of Things/Everything

The **Internet of Things (IoT)** brings together people, data, and things to make networked connections more relevant and valuable than ever before—turning information into actions that create new capabilities, richer experiences, and unprecedented economic opportunities for startup businesses and careers. The Internet of Everything (IoE) concept binds even more and more things to things, things to people, and people to people. The IoE will make many familiar devices and objects in our lives readily internet-connected, smartphone accessible, and responsive in a world where more things are more connected than people.

Cisco predicts by 2023, there will be 75 billion things connected to the internet, and the potential economic impact could be as much as $11.1 trillion per year for IoT applications.[88] The McKinsey Global Institute (MGI) forecasts the maximum possible economic impact of the IoT to be as high as $11.1 trillion per year by 2025. MGI defines the IoT "as sensors and actuators connected by networks to computing systems. These systems can monitor or manage the health and actions of connected objects and machines, the natural world, people, and animals."[89]

Before exploring the economic impact of this amount of IoT revenue, it may be prudent first to comprehend the magnitude of a trillion. A trillion one-dollar bill laid end-to-end would measure 95 million miles long—the distance between the earth and the sun. Eleven trillion one-dollar bills laid end-to-end and side-by-side would create a paper highway two miles wide that would encircle the entire world. Consequently, $11 trillion equates to a lot of money and substantial transformational power. For example, an annual income of $11 trillion amounts to the United Kingdom, Germany, France, and Italy, or 14% of the world economy.

Potential Economic Impact of IoT in 2025: $3.9 to 11.1 Trillion Per Year

Source: McKinsey Global Institute

[88] Cisco, Cisco Networking Academy, https://www.cisco.com/c/m/en_sg/partners/cisco-networking-academy/index.html

[89] The McKinsey Global Institute, The Internet Of Things: Mapping The Value Beyond The Hype, June 2015, https://www.mckinsey.com/~/media/McKinsey/Industries/Technology%20Media%20and%20Telecommunications/High%20Tech/Our%20Insights/The%20Internet%20of%20Things%20The%20value%20of%20digitizing%20the%20physical%20world/Unlocking_the_potential_of_the_Internet_of_Things_Executive_summary.ashx

The MGI study examines nine sectors where the IoT will have the maximum economic impact. The difference between the high and low estimates calculates the maturation rate of digital and network technologies, processes, and systems. The study also considered political/social/organizational/regulatory hurdles. The most impacted sector ($1.2T to $3.7T) is "factories" that include standardized production environments like manufacturing, agriculture, and hospitals. The IoT dollar amounts came from productivity improvements, energy savings, labor efficiency, equipment maintenance, inventory optimization, and worker health and safety improvements. The other eight settings achieve similar economic gains.

Jobenomics asserts that every city, town, and local community will need a cadre of IoT specialists to help citizens with IoT applications. Few people have the knowledge and ability to connect smart appliances to the internet and troubleshoot problems as they occur. These IoT specialists, installers, and maintenance occupations will be as necessary as today's electricians and plumbers, who often make more money than college graduates. Major companies will train these specialists at a minimal cost. For example, Cisco will deliver their IoT Stormwind courses for as little as $900 per person, either in person or online.[90]

The U.S. Centers for Medicare & Medicaid Services (CMS) estimate annual U.S. healthcare spending at $4 trillion or 18% of GDP.[91] The United States is turning to IoT enabled Healthcare to reduce this level of expenditure, emphasizing the highlighted CMS categories.

National Health Expenditures 2019 Highlights

Source: Centers for Medicare & Medicaid Services

The Bureau of Labor Statistics Operational Outlook Handbook (OOH) projects that employment in healthcare occupations will grow 15% from 2019 to 2029, much faster than the average for all occupations, adding about **2.4 million new jobs**.[92] Per the OOH,

[90] Cisco, Stormwind, Enterprise-Level Cisco Training, Cisco Course Catalogue, https://sales.stormwindstudios.com/cisco-online-certification-training?utm_source=google&utm_medium=cpc&utm_campaign=Search%20-%20Cisco&utm_term=%2Bcisco%20%2Bcertification%20%2Bcourse&utm_content=484226121514&gclid=Cj0KCQjwhr2FBhDbARIsACjwLo1NMOdcR3xa45IJQKdBPE_Jvj6v_uQy5iWrk9nPcu-GPJuOKnH_gPsaAh6HEALw_wcB

[91] U.S. Centers for Medicare & Medicaid Services, https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsHistorical

[92] U.S. Bureau of Labor Statistics, Occupational Outlook Handbook, Healthcare Occupations, https://www.bls.gov/ooh/healthcare/home.htm

- The median annual wage for healthcare practitioners and technical occupations (such as registered nurses, physicians and surgeons, and dental hygienists) was $69,870 in May 2020, higher than the median annual wage for all occupations in the economy of $41,950.
- Healthcare support occupations (such as home health aides, occupational therapy assistants, and medical transcriptionists) had a median annual wage of $29,960 in May 2020.
- **Healthcare IoT workers' annual mean wage was $85,290** in 2020 (Top paying industries for Health Computer Systems Design and Related Services).[93]

Goldman Sachs projects digital healthcare (also called e-health, m-health, and connected healthcare) represents the next frontier for the Internet of Things. Goldman forecasts the most significant digital healthcare IoT categories, including remote patient monitoring, telehealth, and behavior modification.

- Remote patient monitoring will effectively manage chronic disease (e.g., heart, lung, and diabetes), equating to one-third of all U.S. healthcare expenditures.
- Telehealth is an ideal method to treat routine medical and mental healthcare issues.
- Behavior modification deals with preventive care regarding obesity, smoking cessation, and lifestyle improvements.

Remote patient monitoring, telehealth, and behavioral modification platforms promise to improve chronic disease management and reduce unnecessary costs by $305 billion. However, digital healthcare will also cause significant disruption in the healthcare industry, causing healthcare providers to shift from fee-for-service to value-based care. [94]

The pandemic tripled the rate of telemedicine and telehealth usage in the United States. Telemedicine differs from telehealth in that the former refers to remote non-clinical care and services and the latter to remote clinical services in association with a physician. Per Insider Intelligence, remote telehealth adoption soared from 11% before the pandemic to 36% by mid-2020. Now that the American public has experienced the convenience of remote health and clinical care, numerous direct-care businesses and service offerings are feasible.

Career opportunities in the Internet of Things cover a plethora of areas. Per CompTIA, the leading occupations include hardware design, software coding, network and systems engineering, product testing and validation, security analysis, data science, database programming, and even technical documentation. Nearly every industry in the world will have well-paying careers for

[93] U.S. Bureau of Labor Statistics, Occupational Employment and Wage Statistics,May 2020, Top paying industries for Health, Computer Systems Design and Related Services, https://www.bls.gov/oes/current/oes299098.htm
[94] Goldman, Sachs & Co., The Digital Revolution comes to U.S. Healthcare, 29 June 2015, http://www.scbio.org/resources/Documents/Internet%20of%20Things%20-%20Volume%205%20-%20The%20Digital%20Revolution%20comes%20to%20US%20HC%20-%20Jun%2029,%202015%5B1%5D.pdf

digital technology workers who can navigate the rapidly expanding IoT/IoE ecosystem. CompTIA provides the following examples:[95]

- **IoT/Cloud Software Developer**
  - Educational requirement,
    - CompTIA Cloud+ and/or A+ certification and experience, or
    - Bachelor's degree in information technology or information networking
  - Annual salary: $73,000

- **IoT Infrastructure Architect**
  - Educational requirement,
    - CompTIA Cloud+ and Server+ certification and experience, or
    - Bachelor's degree in information technology or information networking
  - Annual salary: $100,000

- **IoT Systems Engineer**
  - Educational requirement,
    - CompTIA Cloud+ certification and experience, or
    - Bachelor's degree in information technology, computer science, or computer engineering
  - Annual salary: $72,000

- **Vulnerability/Cyber Engineer**
  - Educational requirement,
    - CompTIA CASP certification and experience, or
    - Bachelor's degree in information technology, computer science, or computer engineering
  - Annual salary: $84,000

- **Test Engineer**
  - Educational requirement,
    - CompTIA Network+ certification and experience, or
    - Bachelor's degree in information technology, computer science, or computer engineering
  - Annual salary: $62,000

In summary, the IoT/IoE will produce tens of millions of American jobs in the digital economy. **Certified** skills-based training will provide entry-level workers with a shot at a well-paying career with multiple exciting career technical and nontechnical career paths. Getting a nontechnical job in a technology company requires that a job seeker understand the basic technical mumbo-jumbo to have a reasonable shot of getting an interview and landing a job. A Jobenomics Digital Academy will give job seekers all the ammo they need.

[95] CompTIA, future//of>>tech, Career Opportunities in the Internet of Things, https://www.futureoftech.org/internet-of-things/6-career-opportunities-in-iot/

Online Entertainment & Video-Gaming

Video gaming's share of global entertainment-media revenues rose during the pandemic by 25% and now captures around 20% of the worldwide entertainment market. U.S. screenagers (24 years and younger) rank gaming as their favorite pastime—well over television watching. Online Entertainment & Video-Gaming is not the next big thing. It is now the big thing regarding growth and business and career opportunities.

Intro To Screen-Time & Video-Game Playing Statistics

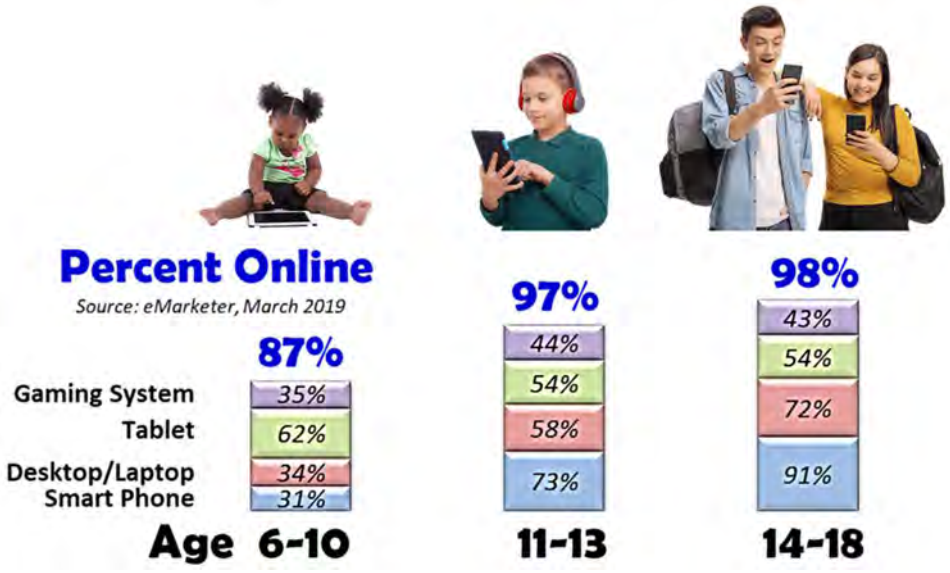
The Jobenomics Digital Academy will incorporate video games as a vital part of the curriculum. First, the Academy can leverage interest in video games to produce marketable life-long digital skills. Second, business and job opportunities in the video-game industry vastly exceed other entertainment sectors.

Online entertainment involves accessing entertainment material, including **video games**, music, TV videos, and books over the internet. Digital device adoption of smartphones, tablets, console games, and smart TVs vastly boosted the number of netizens who have shifted their preference from regular TV viewing toward online entertainment.

According to the Allied Market Research, 2020-2027 Online Entertainment Market Global Opportunity Analysis and Industry Forecast, the online entertainment market was valued at $183 billion in 2019 and is estimated to reach $652 billion by 2027, registering a **CAGR of 20.82% from 2021 to 2027**.[96]

U.S. Tech Device Ownership Of U.S. Children, Tweens, And Teens

Source: eMarketer, March 2019



[96] Allied Market Research, Online Entertainment Market Global Opportunity Analysis and Industry Forecast 2020-2027, June 2020, https://www.alliedmarketresearch.com/press-release/online-entertainment-market.html

This chart shows the devices **owned** by U.S. children and teens, as surveyed online by Comparitech of U.S. parents with children ages 6+ during March 2019. Whether these devices were owned or provided by parents, 87% to 98% of children (age 6-10), tweens (11-13), and teens (14-18) have multiple and ubiquitous online access. With this high level of internet access, coupled with the pandemically-induced surge in online activities, online entertainment has become the digital equivalent of a nanny, au pair, or foster parent.

Smartphone penetration and mobile applications heavily contributed to the surge in online entertainment and gaming. Market growth is poised to take another leap with digital technology advancements in 5G networks, folding smartphones, artificial intelligence, synthetic reality (virtual, augmented, and mixed reality) integrated mobile devices, and 3D-enabled mobile devices. In the same fashion, enhanced video and broadband access will enormously enhance the online entertainment and interactive gaming experience.

Per a 2019 Common Sense Media report on Media Use By Tweens and Teens, American tweens (8 to 12-year-olds) and teens average **4¾ hours and 7⅓ hours of entertainment screen media daily**—not including screen time for homework or school. One-third of American tweens and teens average playing 3 hours of video/mobile games **every day**. Online video viewing consumes the most screen time, 53% for tweens and 39% for teens. Gaming is in second place at 31% and 22%, respectively. [97]

Then came the COVID Screen-Time Grinch. Due to stay-at-home restrictions, tens of millions of American children and tweens now spend countless hours on video games like Roblox. According to the New York Times, "Roblox, particularly popular among children ages 9 to 12 in the United States, averaged 31.1 million users a day during the first nine months of 2020, an **increase of 82 percent** over the year before."[98]

A video game is a digital game typically played on personal computers or dedicated gaming devices, such as game consoles (e.g., Xbox, PlayStation) or handheld devices. Gamers usually play for entertainment purposes, but for-profit commercial games gain popularity and prize money. Video games span various genres, including action-adventure games, role-playing games, simulation games, strategy games, puzzle games, and sports games.

Some interesting video-gaming statistics include:

[97] . Common Sense Media, The Common Sense census: Media use by tweens and teens, 2019, https://www.commonsensemedia.org/sites/default/files/uploads/research/2019-census-8-to-18-full-report-updated.pdf

[98] New York Times, Children's Screen Time Has Soared in the Pandemic, Alarming Parents and Researchers, 16 January 2021, https://www.nytimes.com/2021/01/16/health/covid-kids-tech-use.html

- Global box office revenue for video gaming was 360% higher than TV, Video & Film in 2019, $159 billion versus $42 billion, which fell to $20 billion in 2020 due to the pandemic's closure of movie theaters.[99]
- The number of video game players will be 2.9 billion in 2021 (Newzoo Insights).
- The video-game industry is estimated to be worth $159 billion in 2020 and $200 billion by 2023 (WePC).
- Video game industry analysis from 2019 showed that over 57% of all game developers reside in the United States. (Game Developers Conference).
- More than 85% of total video industry revenue comes from free-to-play games (Clairfield International).
- Mobile games (2.2 billion players) reached a 60% market share in gaming consumer spending in 2019 (Liftoff). The mobile game industry is growing at a year-on-year rate of 25.5%. (Hybridan)

American youth overwhelmingly use their screen time for amusement rather than creative pursuits—an unhealthy condition that the Jobenomics Digital Academy will rectify.

According to the Common Sense Media Use report, "No more than one in 10 in either age group says they enjoy "a lot" things like making digital art or graphics (10% of tweens and 9% of teens), creating digital music (4% of tweens and 5% of teens), coding (4% of tweens and 3% of teens), or designing or modifying their video games (4% of tweens and 6% of teens). By comparison, 67% of tweens and 58% of teens enjoy watching online videos 'a lot.'"

New and entertaining digital content is in high demand by video-sharing apps like YouTube, Vimeo, TikTok, Facebook Watch, Twitch, DailyMotion, IGTV by Instagram, byte, LBRY, Metacafe, and VEVO. These apps have commercial revenue-sharing programs if an individual can attract a sufficiently large following. So while creating a profitable business as an independent content developer is low, the likelihood of getting a good-paying job with experience in the online entertainment industry is high.

Consequently, the Jobenomics Digital Academy will use video gaming to develop career pathways to finding enjoyable and sustainable occupations and businesses. The crucial first steps to developing a viable career pathway in the digital domain involve evaluating the student's **digital footprint**, creating a compelling **digital profile,** and publishing persuasive **digital documents, credentials, and badges**.

- A **digital footprint** collects all the traces that an individual leaves over time in the digital ecosystem. Active digital footprints include content that one voluntarily leaves online.

[99] Fortunly, The Rise of the Virtual Empire: Video Game Industry Statistics for 2021, 25 March 2021, https://fortunly.com/statistics/video-game-industry-statistics/#:~:text=Video%20game%20sales%20statistics%20show,gaming%20market%20generated%20%24151.2%20billion.

Passive digital footprints include cookies of browsing or buying history. Prospective employers, universities, lenders, and clients often aggregate footprint data to build a profile on individuals and their behavior. The Jobenomics Digital Academy will assist all students in digital footprint awareness, positive footprint creation, and damaged footprint restoration.

- **Digital footprint awareness** is an educational process that focuses on posting positive online content and avoiding anything harmful. Children need to learn this behavior early since finding and eliminating dangerous texts, emails, photos, and videos posted in the distant past is difficult.
- **Positive footprint creation** involves initiating and publishing a list of distinctive activities, accomplishments, and community service activities that appeal to prospective patrons or clients.
- **Damaged footprint restoration** entails resolving harmful online content and brand reputation management. Brand management is critical whether an individual is looking for a job or a business seeking a customer. Expunging or mitigating negative past performance issues or overcoming biases is a skill that all successful people should learn early.

- A **digital profile** includes online social media content (e.g., Facebook, Instagram, YouTube, Twitter, TikTok, Pinterest, and Snapchat) and websites. The Jobenomics Digital Academy will assist all students in developing credible profiles that will help them get a job, launch a career or start a business. Jobenomics life coaches will help students develop a digital profile **strategic plan** that includes milestones and schedules of weekly postings on social media platforms. These coaches will also help students design professional websites and timetables to keep website content fresh.
- **Digital documents** profile an individual's digital certifications and qualifications, including relevant full or part-time work experience, skills, education, and notable accomplishments. These documents include hard-copy and electronic biographies, resumes, and handouts.
    - Bios are usually concise one-page documents, whereas resumes are multipage living documents easily adjusted for different opportunities. Most job seekers mistakenly assume that the primary purpose of a bio or resume is to provide a work history overview. From a Jobenomics Digital Academy standpoint, a bio or resume's primary goal is to convince employers that the job seeker is worth interviewing.
    - Handouts include brochures, pamphlets, white papers, briefings, infographics, or other visual representations of information, data, or knowledge intended to present information quickly and clearly.

  Collectively, digital documents constitute the marketing material for an individual or establishment.
- **Digital credentials** include certificates and badges gained through achievement or skills-based training. These credentials are equivalent to paper-based certificates, badges, and awards in the online world.

Organizations award **digital certificates** to acknowledge significant achievements in the same manner that schools issue diplomas. Switching to digital credentials enables institutions to grant their students proof of skill, individuals to prove their credibility, employers to evaluate job candidates, and clients to assess a firm's qualifications. More importantly, digital documents are easier to verify. Trusted third-party certificate authorities can provide tamper-proof digital certificates with secure authentication and connection.

Digital badges are visual representations of an accomplishment used in email signatures, personal websites, digital resumes, and social media sites such as LinkedIn, Twitter, and Facebook. When clicked, the badge enables the user to learn more about the credential, personalized certification dates, expiration dates, and the requirements to earn the badge.

Jobenomics Digital Academy digital badges will be compliant with the Open Badges standard. The Open Badges standard describes a method for packaging information about accomplishments, embedding it into portable image files as digital badges, and includes web-based validation and verification resources. Open Badges explain who earned it, who issued it, the criteria required, and in some cases, provides evidence and demonstrations of the relevant skills.

As a job seeker, digital badges show your skills and accomplishments and share your story on your website and social media. As an issuer, the Jobenomics Digital Academy can break down skills-based training into small chunks to encourage students to follow a path of lifelong applied learning and build marketable skills. The Academy will also provide Open Badges tools to create digital certificates and digital badges for aspiring digital credential developers to earn personal income or business revenue.

Interactive Entertainment Industry

The **interactive** entertainment industry is the video-game industry that deals with the development, marketing, and sales of electronic video games. New global interactive, multiplayer, video-enhanced games and sports tournaments are increasingly part of the traditional console, arcade, and handheld man-machine video games portfolio.

Jobenomics asserts that the keyword in the above paragraph is "interactive." Screen-time engagements like watching TV/videos, social media, browsing, and video-chatting are primarily passive activities. Unlike these more docile pursuits, video gaming engages the human-machine interface, increases visual-spatial skills[100], enhances problem-solving, and augments imaginative play and creativity—all of which are essential attributes of a digitally literate person.

[100] John Hopkins University defines spatial ability is the capacity to understand and remember the spatial relations among objects. This ability can be viewed as a unique type of intelligence distinguishable from other forms of intelligence, such as verbal ability, reasoning ability, and memory skills. Visual-spatial skills are of great importance

From 2015 to 2020, global online traffic increased three-fold and international mobile traffic eight-fold. Online gaming (casual online gaming, networked console gaming, and multiplayer virtual world gaming) and internet video (such as recorded viewing and downloading such as YouTube, Netflix, and Hulu; live event viewing; webcam monitoring, and video surveillance) were the fastest-growing segments in internet traffic growth.

In 2020, nearly a million minutes of video content will cross the global network every second. In other words, it would take an individual more than 5 million years to watch the amount of video that will cross global IP networks each month in 2020.[101] Notwithstanding this ridiculous amount of information, data analysis and artificial intelligence tools can identify, select, preview, and present only the best and desired video content to the consumer.

Based on the amount of time that young adults spend on online entertainment, video gaming could soon be the dominant sector of the entertainment economy. Two-thirds of the Screenagers, Generation Z, ages 18 to 21, spend 7 hours a day online, not counting the 3 hours listing to music, and list video gaming as their main hobby.

Screenagers play computer games, console games, and social games on computing devices, such as personal computers, gaming consoles, or mobile phones. Mobile video gaming mainly allows consumers entertainment pastimes, while console games are for more intensive or competitive gaming.

Annual revenues in the global video game market were $156 billion in 2020 and growing to $268 billion by 2025, a 72% growth rate. North America should remain the top-grossing gaming market worldwide despite solid growth in the Asian region.

As consumers become increasingly digitally savvy, the difference between real-world entertainment and virtual-world entertainment is less significant. Empowered consumers prefer tailored and exciting content experiences that digital entertainment offers. Moreover, video games tend to take the fans out of the bleacher seats, involve them in gameplay, and deliver inspired and personalized experiences. It is no wonder that two-thirds of teenagers and young adults list video gaming as their main hobby, and increasingly many workers are becoming professional gamers and developers.

for success in solving many tasks in everyday life. For instance, using a map to guide you through an unfamiliar city, merging into high-speed traffic, and orienting yourself in a new environment.
https://cty.jhu.edu/talent/docs/SpatialMore.pdf

[101] Cisco, Cisco Visual Networking Index: Forecast and Methodology, 2015–2020, Table 1, http://www.cisco.com/c/dam/en/us/solutions/collateral/service-provider/visual-networking-index-vni/complete-white-paper-c11-481360.pdf

The video gaming industry is in its 8th generation, which is just beginning to incorporate powerful digital technologies like synthetic reality, 5G broadband, machine learning, deep learning, artificial intelligence, and intelligent agents.

- 1st Gen of video consoles started in the early 1970s with home consoles and arcade Pong video games. In the 1980s, arcade games became an international entertainment phenomenon featuring video games like Pac-Man, Asteroids, Donkey Kong, and the like, surpassing the combined revenue of the pop music and Hollywood film markets.

- 2nd Gen began in the early 1980s when the home video games, like Atari's Space Invaders, became popular. 2nd Gen rapidly advanced when gamers could play on personal computers via floppy discs.

- 3rd Gen 8-bit consoles with gamepads and joysticks became popular in the late 1980s, followed by 4th Gen 19-bit consoles with faster processing and higher resolution, followed by 5th Gen 32 64-bit consoles with 3D games and higher fidelity graphics. During the 3rd to 5th Gen period, console and arcade games were simplified and miniaturized for handheld devices and mobile phones. As a result, handheld games, like Mario Brothers, and modest time-killer mobile phone games, like Bubble Buster, became instant successes.

- 6th Gen technology gave rise to video gaming in the early 2000s as built-in modems allowed online play via the internet.

- 7th Gen technology included high-definition graphics that became available via broadband internet connectivity, giving rise to causal and social network gaming. A casual game is a video game characterized by limited time constraints and limited skills. A social game, such as Texas Hold'em, allows users to engage with each other. According to RealPoker, in 2019, there were 23 million U.S. regular online poker players, including 15 million who played for money.

- 8th Gen video gaming technologies, like advanced processing and video units, autostereoscopy (glasses-free 3D), and cloud-based computing, were incorporated into home consoles (Wii U, PlayStation4, Xbox One), video game handhelds (Nintendo 3DS, PlayStation Vita), as well as smartphones, tablets, and smart TVs.

Today's 8th Gen video games have reached a degree of fidelity and graphics that are astonishingly real and additive. Emerging digital technology enables video games to perform functions for humans in merged virtual/physical worlds. Artificially intelligent agents now act like personal Sherpas that learn users' interests based on previous activities. These avatars represent user alter egos in the virtual world. On the flip side, virtually enhanced 3D worlds assist users in their physical world to educate, train, and entertain.

According to Nielsen, connectivity and access to media have fueled an immense surge in free-to-play games. The free-to-play groundswell forced multiplayer games with premium price tags to switch to free-to-play business models. The loss of upfront premium game revenues is more than

offset by the surge of new player purchases of in-game goods like cosmetic items and battle passes.

The pandemic's stay-at-home orders skyrocketed video gameplay in 2020. At the height of lockdowns, 55% of U.S. consumers played video games due to COVID-19 and subsequent restrictions. As a result of the lockdown, video gaming transcended the traditional boundaries of the entertainment industry by becoming a communications medium to stay in touch with family members and friends. Research from SuperData, a Nielsen company, found that roughly one in 27% of U.S. residents used video games as a way to maintain socially active with other people in 2020.:[102]

This 3D world is operational today. Second Life is an online virtual world developed by San Francisco-based Linden Lab.[103] Second Life users (also called Residents) create their own avatars "who" interact with other avatars, places, or objects. They can explore the world (known as the grid), meet other residents, socialize, participate in individual and group activities, build, create, shop, and trade virtual property and services. While Second Life never got past two million users, it has inspired numerous other technical, academic, and businesses to pursue synthetic reality. Facebook jumped into the virtual world with the acquisition of Oculus VR for $2 billion. Oculus headsets allow users to engage in unique virtual experiences. These headsets can be purchased for as little as $100 and linked to the virtual world via smartphones.

In the foreseeable future, the video gaming industry will likely provide interactive content that far exceeds other forms of entertainment, including the traditional American past times of professional sports. Millennials and Screenagers are not as big fans of professional sports as older generations. According to Stratechery, a technology blog, over the last decade, the average age of U.S. National Football League viewers increased from 43 to 47, and U.S. Major League Baseball viewers rose from 46 to 53 years of age. Other popular sports venues are seeing declines in ratings and viewership. The NBA finals, Stanley Cup finals, MLB, Indy 500, Kentucky Derby, U.S. Open, and The Masters all suffered double-digit domestic viewership declines during the pandemic due to canceled events and shorter seasons.

The consensus is that viewership will likely return to normal after the pandemic runs its deadly course. Jobenomics disagrees. The sports world will never be the same again. The pandemic established a new normal that is yet to reveal itself. We know that traditional habits (TV viewership, attending games, tailgating, etc.) were interrupted and replaced by other forms of online entertainment. E-sports moved many sports fans out of the bleachers and onto the field of play in a manner that professional sports teams could never do.

[102] Nielsen, Tops Of 2019: Video Games, https://www.nielsen.com/us/en/insights/article/2019/tops-of-2019-video-games/, and The Future Of Video Gaming Is Bright—Even As Real Experiences Return, https://www.nielsen.com/us/en/insights/related-tag/video-games/

[103] Second Life, http://secondlife.com/ and http://en.wikipedia.org/wiki/Second_Life

E-Sports Industry Opportunities

Of the genres in the video gaming industry (action-adventure, shooter, sports), the e-sports industry is growing at an annual rate exceeding 50% and rapidly displacing real-world sports venues.

Globally, the total esports audience will grow to 474 million people in 2021, of which 235 million are regular viewers.[104] In 2021, the global core e-sports market (channels, publishers, leagues, events, and teams) revenues were $1.1 billion U.S. dollars, an almost 50% increase from the previous year, with a forecast of $1.6 billion in 2024. Today, the largest market is China ($360 billion), followed by the United States ($243 billion), Western Europe ($206 billion), and the rest of the world ($595 billion).[105] The total e-sport marketplace is about $45 billion, including core, e-sports betting, services, hardware, content, brands, and PC/mobile/console games.[106]

There are hundreds of e-sports PC /console/mobile games featuring the following genres: fighting games, first-person shooters, real-time strategy, and multiplayer online battle arena games. Naturally, PC and cross-platform games are the most popular. However, 2020 was the year for mobile e-sports, with PUBG Mobile in the top spot with 134,554,130 hours of game time watched. Garena Free Fire came in a close second with 132,245,801 hours.[107]

E-sports encompasses a wide range of games, including real-time strategy games (e.g., League of Legends), first-person shooter games (e.g., Call of Duty: Modern Warfare), and fantasy betting games (e.g., Fantasy Football). E-sports tournaments, where professional gamers play video games in competition with others, have grown into colossal spectator events that have motivated companies such as Facebook, Amazon (Twitch), YouTube, and Microsoft (Mixer) to form dedicated e-sports channels. As a result, more people watch e-sports than HBO, Netflix, ESPN, and Hulu combined.

The four most popular eSports video games watched on streaming platforms worldwide in 2019 by live hours watched were League of Nations (349 million), Counter-Strike Global Offensive (215 million), Dota 2 (199 million), and Overwatch (110 million).[108] Super Bowl LIII (2019) generated 560 million total hours of live game coverage. In terms of finals audience viewership, the NFL is king with 124 million viewers, followed by the League of Nations (58 million), Major League

[104] Newzoo, Global Esports & Live Streaming Market Report, 2021, https://newzoo.com/products/reports/global-esports-live-streaming-market-report
[105] Statista, eSports market revenue worldwide from 2019 to 2024, 1 June 2021, https://www.statista.com/statistics/490522/global-esports-market-revenue/
[106] Roundhill Investments, Esports 101, https://www.roundhillinvestments.com/research/esports/esports101
[107] ESPORTs Charts, The most popular mobile esports games in 2020, #1--PUBG Mobile, https://escharts.com/blog/most-popular-mobile-esports-games-2020
[108] Statista, Most popular eSports video games watched on streaming platforms worldwide in 2019, by live hours watched, https://www.statista.com/statistics/1125460/leading-esports-games-hours-watched/

Baseball (38 million), National Basketball Association (32 million), and National Hockey League (11 million).[109]

From a Jobenomics perspective, the e-sports industry is still in its infancy, and the business and career opportunities are vast. E-sports employment and startup business paths consist of professional gaming and e-sports industry professions.

The five primary sources of income for professional gamers include prize money, salaries, sponsorships, live-streaming, and video-on-demand content.

- As in conventional individual sports venues like tennis or golf, prize money is a viable way to make a living only for the best gamers. Consequently, most gamers make money from professional teams primarily funded by sponsors, like computer and beverage companies. Globally, there are 200 major professional sports teams, of which half are in the United States.[110] In addition, like conventional major league sports teams, many e-sports leagues have lower-tier clubs for wannabe professional gamers.
- Streaming (via Twitch, YouTube Gaming, Facebook Gaming, Fubo TV, and Mixer live-streaming service providers) is the most popular way for non-competitive professional gamers to make a living in e-sports. Streamers form partnerships with these service providers that share subscription revenue with the gamer. For example, a streamer with 2,000 Tier 1 Twitch subscribers can make about $5,000 per month. A Tier 2 steamer with 4,000 followers can earn $14,000/month, not including donations.[111]
- Video-on-demand content development allows amateur e-sports enthusiasts to make money and build followings on Instagram, TikTok, and YouTube (described in the following Creator Economy discussion).

Most U.S. colleges and universities have amateur e-sports teams. The newest e-sports venues involve local communities, companies, and churches. Consequently, one of the best ways for a well-heeled amateur to get into the business is to start a local team with your gaming buddies.

The Corporate Esports Association (CEA) organizes and runs e-sports tournaments between organizations to raise funds for charity. Games are competitive for every skill level. The CEA matches teams against other company teams of similar skill. For students interested in joining these companies, CEA introduced Collegiate Series. The CEA Collegiate Series pairs job seekers with company employees as a way of networking and team building. During the competitions, these job seekers can meet with many different companies. [112]

[109] Roundhill Investments, Esports 101, https://www.roundhillinvestments.com/research/esports/esports101
[110] ProSettings.com, All Esports Teams, https://www.prosettings.com/all-esports-teams/
[111] Teknos, How Do Professional Gamers Make Money?, Twitch, https://www.teknosassociates.com/how-do-professional-gamers-make-money/
[112] CEA Corporate Esports Association,

In many ways, CEA is replacing 200 corporate softball teams across the United States with e-sports teams. Primary schools, non-profit organizations, community centers, religious institutions, and school-age care centers could also use the CEA model for networking and team building.

The Jobenomics Digital Academy plans to work with organizations like CEA to develop certified skills-based training programs, followings, portfolios, e-sports digital footprints, and startup businesses for people interested in this career field.

The likelihood of making it big as a professional gamer is small. On the other hand, the probability of an exciting and well-paying career in a burgeoning industry is high. Even a self-employed nonemployer company without revenue can create a wide range of employment, subcontract, and business opportunities in the e-sports industry. Having proven oneself as an amateur or entry-level professional gamer can generate multiple management, operations, sales, event planning, coaching, agencies, and social media opportunities.

If you are not interested in starting a business, one can always try out one of the leading e-sports only job boards like Hitmarker or ReKTJobs. Hitmarker alleges that it is the largest gaming and esports jobs platform globally, with over 9,000 active listings from more than 50 countries. Likewise, ReKTJobs claims to be the global esports career site leader delivering job openings and internship postings from the hottest esports and gaming organizations and teams. The Jobenomics Digital Academy will help students evaluate who is hiring and the skills needed via these job boards.

A leading e-sports career pathway is to work for a leading video game company as an employee or independent subcontractor. Here is a list of the Global Top-10 in 2021, along with gaming revenue and the most profitable game sold in 2020: [113]

1. Sony, $25.0 billion, PlayStation 5 (video game console)
2. Tencent, $13.9 billion, Honor of Kings
3. Nintendo, $12.1 billion, Animal Crossing: New Horizons
4. Microsoft, $11.6 billion, Xbox Series X/S (video game console)
5. Activision Blizzard, $8.1 billion, Call of Duty: Black Ops Cold War
6. Electronic Arts, $5.5 billion, FIFA 21
7. Epic Games, $4.8 billion, Fortnite: Save the World
8. Take-Two Interactive, $3.1 billion, NBA 2K21
9. Sega Sammy, $2.3 billion, Total War Saga: Troy
10. Bandai Namco, $2.2 billion, Dragon Ball Z: Kakarot

[113] All Top Everything, Top 10 Biggest Video Game Companies in the World 2021, https://www.alltopeverything.com/top-10-biggest-video-game-companies/

These Top-10 companies employ approximately 110,000 of the top e-sports and video gaming developers globally. To interview these prestigious organizations, one must have the digital literacy and technical qualifications that a digital academy and business generator can provide.

As mentioned in Chapter 1, livestreaming refers to watching, creating, and sharing online streaming media (video and audio) simultaneously during recording and broadcast in real-time. Sports-related livestreaming services, like Fubo TV, marry video gaming with live sports gambling. Sports gambling is now legal and active in 21 states plus the District of Columbia. An additional 20 states have legalized (but are not yet operational) or pre-filed legislation for legalization. The U.S. Census Bureau projected sports betting revenues in 2021 at $2.1 billion, expanding rapidly to $10.1 billion in 2028. MGM Resorts International and Morgan Stanley estimate a market size between $13.5 billion and $15 billion by 2025, with 38 US states participating.[114]

Since sports gambling is in its infancy with projected explosive growth, it represents a significant career and business opportunity for accomplished e-sports enthusiasts.

To sum up, the Jobenomics Digital Academy & Business Generator will capitalize on an enthusiast's dual interest in sports and video gaming to create career and startup business pathways in the rapidly growing $50 billion e-sports industry.

[114] eMarketer, The sports gambling opportunity for marketers, 21 June 2021, https://www.emarketer.com/content/sports-gambling-opportunity-marketers?ecid=NL1009

The Emerging Creator Economy

The emerging **Creator Economy** (often called the Influencer Economy) entails earning income from making and distributing online video, text, or musical content. Today, video is preferred. Most people can recall a video message that they watch instead of a text message that they read.

With the advent of streaming video, online entertainment, social media, and video sharing, new and fresh forms of content are in high demand. New content producers have skyrocketed with new smartphone video technology and inexpensive and high-quality mobile action cameras (e.g., GoPro).

The fledgling Creator Economy (paid) consists of more than 50 million independent content creators, curators, and community builders, including social media influencers, bloggers, videographers, and technology providers, of which 2 million are full-time professionals. These statistics do not include content creators that work for the established television, film, and streaming service industries—a huge source of business and jobs for these independent creators.

The Art of Storytelling

Generally speaking, a person remembers information but retells stories. Stories create mental images and fascinate audiences. A compelling subject quickly personalizes the storyteller and forges a connection.

Our great-grandparents could not send a text but could tell stories to gain the cooperation and trust of others. Storytelling also imparts information and creates understanding. More than ever, today's transactional, multi-tasking society needs good storytellers.

According to a Forbes (an American business magazine) article, "Ask a kid today in the U.S. what they want to be when they grow up. No longer is musician or athlete the top answer. It's a YouTuber—an answer 3x more popular than an astronaut." Per this article, today's global "Creator Economy" has 50 million people who consider themselves "creators." Two million small businesses (primarily self-employed nonemployer firms) involved in the Creator Economy earn over $100,000 annually, with many more amateurs aiming to achieve similar status.[115]

To achieve the youthful aspiration of being a "YouTuber," one must be digitally literate. Digital literacy requires both social and technical skills. Interpersonal communication and informational skills are the most important since creating a YouTube video are not technically challenging. To facilitate the next generation of professional YouTubers, the Jobenomics Digital Academy will train students in **the art of storytelling**.

[115] Forbes, 50 Million Join The 'Creator Economy' Thanks To Platforms Like OnlyFans, YouTube, Etsy And Twitch, 23 September 2020, https://www.forbes.com/sites/mattklein/2020/09/23/50m-join-the-creator-economy-as-new-platforms-emerge-to-help-anyone-produce-content--money/?sh=562d276a3165

To be successful in the digital economy, one must learn to tell stories digitally via video, images, and text. Videos on social media generate 12-times more shares than images and text. As a result, video content is in high demand by streaming services, social media, and online entertainment. Moreover, since the average American spends 13 hours daily on media (8 hours digital and 5 hours traditional media/TV), consumer demand for new and innovative video content is exploding.

Video content statistics are eye-opening. For example, livestreaming (transmitting or receiving live video in real-time) accounts for 80% of internet traffic. 40% of video viewers say that compelling content (a story) is the primary motivator for live online viewing. Companies that use video enjoy 41% more traffic from searches. 96% of people say they've watched an explainer video to learn more about a product or service. 79% say a brand's video has convinced them to buy this product or service.[116] In the digital business domain, storytelling makes buying and selling more personal.

Stories are quick and easy ways to share moments and experiences. Per Social Media Today, storytelling is the core of an effective social media and content development strategy. Storytelling enables content creators to build narratives and connect with friends, customers, and connections. Nearly all social platforms (e.g., Instagram Stories, Facebook Stories, Messenger Day, and Twitter Moments) now have tools for telling social media stories.[117] For example, Instagram Stories usage statistics indicate that over 500 million Instagrammers use stories daily. Moreover, 70% of Gen Zers and 59% of Millennials watch stories on Instagram.

Thus, **the art of storytelling** is central to digital content creation and the soaring Creator Economy. Like other arts, the art of storytelling is a learnable skill.

Creator Economy Is Ideal For Entry-Level Job Seekers

The Creator Economy is the newest and fastest-growing segment of the digital economy. According to Influencer MarketingHub, since October 2020, $800 million in industry growth was recorded from only 31 startup capital investments.[118] In other words, invests see the Creator Economy as the next brilliantly innovative and creatively disruptive marketplace sensation.

Per eMarketer, the amount of money corporations pay U.S. influencers to market products and services is predicted to grow to $3.7 billion in 2021, up 34% from 2020, surpassing $4.6 billion by 2023. [119] Demand for short videos and social commerce accelerated large and small business

[116] TechJury, 37+ Live Streaming Statistics Every Marketer Should Keep In Mind in 2021, 20 May 2021, https://techjury.net/blog/live-streaming-statistics/
[117] Social Media Today, Why Social Media Stories Matter, 19 February 2021, https://www.emarketer.com/content/us-influencer-spending-surpass-3-billion-2021?ecid=NL1001https://www.socialmediatoday.com/marketing/why-social-media-stories-matter
[118] Influencer MarketingHub, Creator Earnings: Benchmark Report 2021, https://influencermarketinghub.com/creator-earnings-benchmark-report/
[119] eMarketer, US influencer spending to surpass $3 billion in 2021, 20 July 2021,

influencer marketing campaigns. Post-pandemic resurgence of the travel, hospitality, and apparel industries generates rapid growth in the Creator Economy.

Creators produce some form of product or perform some artistic service, and fans support their favorite creators via purchasing goods or services, subscription payments, or capital investment. Creators include digital content creators, bloggers, online fitness instructors, musicians, writers, journalists, gaming creators, tutorials, education, artists, craft makers, and many other niche players. Creators cater to people and brands that want personalized, unique, and authentic content.

The Jobenomics Digital Academy & Business Generator will focus on digital content creation since it is the most lucrative component of the fledgling Creator Economy and an ideal way for entry-level job seekers to get traction in the digital economy.

With the advent of streaming video, online entertainment, social media, and video sharing, new and exciting forms of digital content are in high demand. New content producers have skyrocketed with new smartphone video technology and inexpensive and high-quality mobile action cameras (e.g., GoPro). The 294 million U.S. smartphone users are novice (unpaid) content creators if they produce a video and post it on social media. This massive pool of content creators is beginning to recognize that their pastime activities can generate part-time or full-time income.

The digital economy has created a cultural shift from national brands that service millions and billions of customers to unique creator brands tailored to thousands of supporters. Millennials customization and personalization that agile content creators can provide rather than cookie-cutter responses to the number of likes, impressions, and views—the mainstay of big media.

According to Forbes, unlike broadcast media or social networks, individual digital content creators can build viable businesses from a small number of dedicated fans and financed by using content subscription platforms like Patreon, OnlyFans, and Substack. As mentioned in the video-gaming section of this document, 31 million American children ages 9 to 12 spend countless hours on Roblox, the most popular game for Screenagers. But more than just a video game. It is an open-play platform where children become creators who build new games with in-game items for trade or sale. [120]

Today, the fledgling Creator Economy (paid) consists of more than 50 million **independent** content creators, curators, and community builders, including social media influencers, bloggers, videographers, and technology providers, of which 2 million are full-time professionals. [121]

[120] Forbes, The Creator Economy, NFTs And Marketing, Kian Bakhtiary, 18 April 2021, https://www.forbes.com/sites/kianbakhtiari/2021/04/18/the-creator-economy-nfts-and-marketing/?sh=11cb81281204

[121] SignalFire, SignalFire's Creator Economy Market Map, How many creators are there?, https://signalfire.com/blog/creator-economy/

Social media exposure influences today's kids' career aspirations. A recent survey by toymaker Lego found that one-third of kids between 8 and 12 aspire to be either a vlogger or a YouTuber.[122] In 2020, there were 37 million YouTube channels (growing an annual rate of 23%), the world's 2nd most visited site.

Per the 2021 Neoreach Creator's Earning Power survey, approximately 57% of all surveyed independent content creators made less the $50,000 per year, 20% earned $50K-$100k, 21% made $100K-$500K, and the remaining 2%+ exceeded $500K per year. Of the independent content creators who work full time, 78% make an average annual income of $108,182 which is on par with an entry-level software engineer. Sponsorships bring in the bulk of Creator income, with 94% of content creators having made at least one sponsored post per year. Additionally, 42% of creators reported 16 or more sponsored posts per year.[123] A sponsored post refers to any social media post that includes paid promotion.

These statistics do not include content creators that work for the established television, film, and streaming service industries. These industries represent an ideal source of business and employment opportunities for independent content creators.

- Television news and weathercasters use local video footage and images shot by amateurs with smartphones during crisis events.
- The six major film studios pursue independent filmmakers, hire content creators, and acquire independent filmmaker studios.
- Every major television network and media company has recently launched a new streaming service and is starving for new video content. Here is a partial breakout of streaming service providers:
    - **Major services**. Netflix, Amazon Prime Video, Apple TV+, Hulu, Paramount+, Disney+, HBO Max & Now, Peacock, and Discovery+.
    - **Premium cable**. Showtime, Epix Now, and Starz.
    - **International.** U.K.'s Acorn and Britbox, South Korea's Kocowa, European-centric MHz Choice, Latino-centric Pantaya, and Bollywood's Spuul),
    - **Specialty niche.** ESPN (sports), Shudder (horror), diversity-centric (gender, racial, and ethnics), and educational (PBS Passport, Smithsonian Channel Plus, CuriosityStream) channels.
    - **Independent (indie).** A dozen new independent streaming outlets recently came online, with dozens more in the making.

[122] CNBC, Forget law school, these kids want to be a YouTube star, 3 August 2019, by Yelena Dzhanova, https://www.cnbc.com/2019/08/02/forget-law-school-these-kids-want-to-be-a-youtube-star.html
[123] Neoreach & Influencer MarketingHub, Creator Economy, Creator Earnings Benchmark Report 2021, page 11, https://influencermarketinghub.com/ebooks/Creator_Economy_-_Creator%20Earnings_Benchmark_2021.pdf

The independent film (aka, indie film, indie movie) industry consists of low-budget (usually less than $5M) feature or short films. Subscription-based stream video services are the most extensive independent video content and talent consumer.

The Jobenomics Digital Academy & Business Generator will provide career and business development pathways for students interested in the Creator Economy. These pathways could result in either employment with the television, film, and streaming service enterprises listed above or starting a self-employed (nonemployer) or micro business with fellow like-minded students. The Academy will have a fully-equipped studio or utilize the resources of an existing local studio.

The Jobenomics America TV show's co-producer (this author, Chuck Vollmer, shown on the right) and executive producer (Dr. Sam Hancock, seated) use independent studios in the Washington DC region. These two baby boomers collectively created thousands of hours of video programming and thousands of written online documents (such as white papers, business plans, and PowerPoint presentations). If two baby boomers can generate this level of new online content, digital natives should be able to do exceedingly more, given the power of the digital technology revolution.

As the Founder of EmeraldPlanet International Foundation and EmeraldPlanet TV,[124] "Dr. Sam" produced 3,000 individual Shows and 700 one-hour programs via the PEG (Public Education Government) Media Network (also known as public-access television). Services available at public-access television organizations are low-cost or free. The stations that use PegMedia for content cover tens of millions of cabled homes and represent more than 60% of the total U.S. cable viewership, giving local content creators a vast potential audience.

The Jobenomics Digital Academy studio will access the 1,500 U.S. PEGMedia access centers across the United States that manage upwards of 5,000 cable television PEG channels. These channels carry 20,000 hours of new programs from local governments, schools, health and jobs organizations, social services agencies, and residents each week. The PEG channels vastly outnumber the 354 public broadcast television stations.[125] The primary reason for using PEGMedia is to give the Digital Academy student content creators a national-level outlet for their content portfolio.

The Jobenomics Digital Academy will provide hands-on training and certifications in video (film, streaming, and on-demand) and audio (radio) production and programming. Certified skills-based training programs include producing a video/audio show, film editing, field production, camera grip, writing for visual media, media, story-telling, creating online content, marketing,

[124] EmeraldPlanet International Foundation, https://www.emerald-planet.org

[125] EveryCRSReport.com, Public, Educational, and Governmental (PEG) Access Cable Television Channels: Issues for Congress, Overview: The Environment Today, January 2014, https://www.everycrsreport.com/reports/R42044.html

and advertising. In addition, our small business media toolkit classes will provide instruction on what media assets every startup business should have for using still images, email content, social media, websites, and print.

How Content Creators Can Make Money

Unlike in the past, content creators can earn money without well-connected managers, stringent contracts, or big media. The Digital Economy already has the marketing channels that content creators require. For example, YouTube and TikTok are available for video content makers, Twitch and Mixer for live streamers, WordPress and Tumblr for bloggers, and Pinterest and Instagram for photographers.

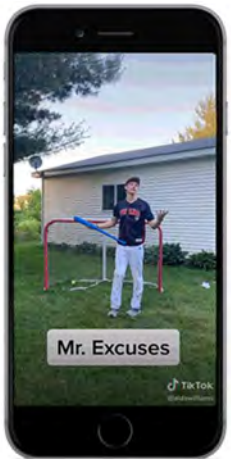
According to the 2021 Neoreach report, though digital content providers use multiple digital platforms, Instagram is the most popular platform. 72% of video content creators prefer Instagram as their primary content channel, 13% for TikTok, and 9% for YouTube. Facebook, Twitch, and Twitter make up the remaining 6%.[126] The Jobenomics Digital Academy will train students to make money on these platforms.

So, how do content providers make money from these businesses? Most do not. However, some make an insane amount of money if they have a large following or some level of influence over their following.

Since Instagram is the most popular platform, it will serve as a good example. Let's start with the basics. Instagram (owned by Facebook) has 1 billion active monthly users compared to the 3 billion active monthly Facebook app users. On the other hand, Instagram generates four times more interactions than Facebook. Thus, Instagram has a tremendous reach, including the business sector. 72% of all U.S. businesses use Instagram. Instagram helps 80% of Instagram users decide to buy a product or service from these companies. From a content creator perspective, in mid-2021, Instagram announced that it's "no longer a photo-sharing app" and focuses on four new priorities: **creators**, video, shopping, and messaging. Note that creator development is a top priority.

Consequently, companies incentivize Instagram content creators to be innovative in endorsing company products and services. The more content creators influence their followers, the more they earn. The amount of money a content creator (influencer) earns depends on the frequency of postings, content uniqueness and appeal, and followers. It also helps build a following—a training and pseudo-business activity that the Jobenomics Digital Academy will encourage students to begin early. Instagram's new video-editing software, Reels, makes it easy to film, edit and post 15-second videos from your smartphone.

[126] Neoreach & Influencer MarketingHub, Creator Economy, Creator Earnings Benchmark Report 2021, page 13, https://influencermarketinghub.com/ebooks/Creator_Economy_-_Creator%20Earnings_Benchmark_2021.pdf



Widely popular with Gen Z, TikTok's video-editing software inspired Instagram to develop Reels. Generation Z (Screenagers in Jobenomics lingo) now use cellphone videos as their primary method to communicate and gain a following. For example, Aidan Williams, an Ohio teenager, used Tiktok to gain 1.9 million followers with corny sports vlogs within a year. His first vlog, a spoof on high school baseball players (shown), garnished 119,000 views.

A vlog is a video blog for which the medium is a video. Vlog entries often combine embedded video with supporting text, images, links, and metadata (data about other data). Vlogging is now one of the most popular forms of digital entertainment and the mainstay of Instagram, TikTok, and YouTube.

As a general rule of thumb, content creators must have around 1,000 followers. 48% of Instagram users have a follower counts of more than 1,000 followers, which is surprisingly high since the average Facebook user has only 338 friends, of which only a third are close friends. 37% of Instagram users have between 1,000 and 10,000 followers. 10% have 10,000-500,000 followers. And 0.5% have over 500,000.[127]

There are four ways to make money on Instagram: (1) create sponsored posts for brands that are interested in your followers, (2) become an affiliate and make a commission selling other brands' products, (3) create an online store and sell your digital content, physical products or personal consulting services, and (4) sell licenses or non-fungible token (NFTs) for your created content.

1) Creating sponsored posts for brands is the leading way to monetize one's creative content. Per Finance Buzz, brands will pay as little as $5-$10 per 1,000 followers or as high as $100 per post on rare occasions.[128] According to USA Today, a "micro-influencer" with 10,000 to 50,000 active fans can make a few thousand dollars per post. Instagram influencers with up to 1 million followers can see $10,000 per post. The most popular influencers (i.e., celebrities) bring in $250,000 to $500,000 per post.[129] Dwayne Johnson (221 million followers) and Kim Kardashian (208 million followers) reportedly earn $1,015,000 per post.

   The way to start as a sponsored post creator for brands is to build an online portfolio with local businesses and a following with fellow Digital Academy students. The Academy will liaise with local firms interested in content development, advertisements, and promotions with local flavor. For example, a new pizza business might offer students incentives (like free

[127] Business of Apps, Instagram Revenue and Usage Statistics (2021) , updated 24 May 2021, https://www.businessofapps.com/data/instagram-statistics/

[128] Finance Buzz, Top 10 Instagram Celebrities and How Much They Get Paid, How much does Instagram pay per post?, 13 May 2021, https://financebuzz.com/top-10-instagram-celebrities-and-how-much-they-get-paid

[129] USA Today, On YouTube or Instagram? Here's what it takes to make money as social media 'influencer', by Jefferson Graham, updated 16 March 2021, https://www.usatoday.com/story/tech/talkingtech/2019/07/10/how-much-money-could-you-make-as-youtube-instagram-influencer/1685467001/

pizzas) to promote the store. This pizza gig allows students to create video or photo content for their digital dossier and engage with fellow students and restaurant patrons.

From a Jobenomics standpoint, the most valuable learning experience of such an engagement is the student's newfound understanding of marketing and business fundamentals—traits that could pay dividends in a future career.

Typically, these engagements involve creating Instagram ads linked to one's Facebook page—this is easy to do—and then using the Ads Manager feature to start your first campaign. This campaign is often a creative video, post, or story. The most compelling stories incorporate graphics, stickers, and augmented reality filters. Augmented reality filters work with most smartphone cameras to generate computer effects superimposed on real-life images—skills taught at the Digital Academy.

2) The second way to earn money is to become an affiliate and earn a commission selling other brands' products. Unlike an influencer, affiliates receive money (commissions) every time they promote a company's products or services and drive a sale. Affiliates often use trackable links or unique promo codes to ensure clicks translate into sales. It is not uncommon for a company to hire affiliates to act in a short Instagram Story (a fun, engaging, or pithy testimonial) that promotes the business, a product, or service. Instagram reports there are more than 400 million daily users for stories.

3) Creators can open their online stores. One of the first courses taught at the Digital Academy is starting your own business with an interactive (Web 2.0) website. Building an e-commerce feature on a website has never been easier. GoDaddy, a U.S. web hosting company, has over 100 free mobile-friendly templates designed to get an online store started "in a day." Online stores can sell services (like developing content for small businesses) or novelty products (such as tee shirts, mugs, etc.).

   Shopify is one of the best e-commerce platforms for beginners that want a more robust e-commerce package. Basic Shopify costs only $29/month and comes with everything one needs (from storefront design to content marketing to performance analytics). Shopify reports that it has more than 1,700,000 businesses in approximately 175 countries using its platform as of May 2021.

4) Non-fungible tokens (NFTs) are unique digital items (collectibles, artwork, game items, etc.) with blockchain-managed ownership that can be bought and sold securely. NFTs are the latest addition to the online gaming craze. For example, online video gamers purchase NFT unique skins (outfits) for Fortnite or League of Legends battle games or buy extra lives in Harry Potter Puzzles and Spells.

   Interest in NFTs recently surged when celebrities and auction houses learned that blockchain technology could secure the market value of personal digital photos and video clips from illegal reproduction (piracy) or theft.

In March 2021, a digital work of art called "Everydays: the First 5000 Days" NFT (collage of 5,000 digital images, shown) sold for a record $69.3 million at Christie's auction house in London.

The Everdays NFT is a digital token secured by blockchain technology that protects cryptocurrencies like Bitcoin and Ethereum. However, unlike cryptocurrencies, unique NFTs (like digital art, videos, photos, games, collectibles, etc.) are not fungible (interchangeable), like exchanging a bitcoin for another similar value. NFT video collectibles (virtual trading cards) are the modern-day equivalent of baseballs for trade or sale.

A partnership between the National Basketball Association and Dapper Labs (a blockchain company) is now selling NBA Top Shot NFTs. The NBA sells Top Shot Moments either in packs or as individuals. As of 12 June 2021, the 2021 NBA Playoff pack sells for around $14, whereas the soldout THROWDOWNS pack sold for $149. The NBA Top Shot's most valuable listing's NFT video clip of LeBron James slam-dunking ask price is $232,323.00.[130]

According to Dapper, "The NFT Company," Top Shot has over 3 million marketplace transactions with $500 million in total sales. Dapper also "birthed" 1.9 million CryptoKitties that netted $40 million in sales.[131]

There are numerous NFT marketplaces, including Rarible, OpenSea, and Enjin Marketplace that NFTS.

In conclusion, the fledgling Creator Economy is likely to create billions of full and part-time independent content creators, curators, community builders, social media influencers, bloggers, videographers, and technology providers. These statistics do not include content creators that work for the established television, film, and streaming service industries—a huge source of business and jobs for these independent creators. The Jobenomics Digital Academy & Business Generator will help local communities exploit these opportunities. Equally important, underserved and under-resourced communities will be able to train and retain digital talent that might otherwise move to more affluent areas.

[130] NBA Top Shot, Own the NBA's Best Moments, https://nbatopshot.com/
[131] Dapper Labs, The serious business of fun and games on the blockchain, https://www.dapperlabs.com/

Gig/Contingent Workforce Economy

Gig/Contingent Workforce Economy is an environment where temporary positions are common, and organizations contract with independent workers for short-term engagements. The term "gig" originated from musicians who called their short-term performances gigs. The Gig Economy was initially part of the On-Demand Economy since it provided services as and when required by clients. As they grew, gig workers became known as the alternative workforce with nonstandard workforce agreements.

Characteristics of nonstandard workforce agreements include limited time duration (temporary jobs), travel (remote work), and third-party engagements (independent assignments) that are subject to change (contingent work). Contingent workers include consultants, freelancers, artists, entertainers, independent contractors, independent professionals, teleworkers, flex jobs, temporary contract workers, temps, on-call workers, and day laborers.

Even though gig/contingent workers comprise over one-quarter of the U.S. labor force, there is no uniform definition of this critical component of the U.S. economy. The Bureau of Labor Statistics (BLS) limits its definition of contingent workers to the portion of the labor force who have "nonstandard work arrangements," those without "permanent jobs with a traditional employer-employee relationship," or those "who do not expect their jobs to last." The Gig Economy Data Hub, a partnership between the ILR School and the Aspen Institute, states, "non-standard or gig work consists of income-earning activities outside of standard, long-term employer-employee relationships," which puts a more positive spin on this profession.[132]

Five years ago, on 4 April 2016, Jobenomics published an e-book entitled "The U.S. Contingent Workforce Challenge" that estimated the size of the U.S. contingent workforce at 60 million or 40% of the total employed workforce. Given current trends, by 2030, this number could increase to 80 million, or 50%, of the U.S. labor force.

U.S. Contingent Workforce Size Estimates: 1998 to 2030

	BLS/GAO 1995 CWS	BLS/GAO 1999 CWS	BLS/GAO 2005 CWS	GSS 2006	GSS 2010	Jobenomics 2016 Est.	Jobenomics 2030 Est.
Employed	123,208,000	131,494,000	138,952,000	143,150,000	138,438,000	149,703,000	160,000,000
Contingent Workforce	39,549,768	39,448,200	42,519,312	50,531,950	55,790,514	59,881,200	80,000,000
	32.1%	30.0%	30.6%	35.3%	40.3%	40.0%	50.0%

Source: GAO Contingent Workforce Report (GAO-15-168R), Tables 3 & 4, 20 April 2015

Source: Jobenomics

[132] Gig Economy Data Hub, a partnership between Cornell University School of Industrial & Labor Relations and Aspen Institute Future of Work Initiative, https://www.gigeconomydata.org/basics/what-gig-worker

This graph shows the government studies that underwrote the Jobenomics supposition that there were 59,881,200 Americans that were in the Gig/Contingent Workforce Economy as of April 2016. Many people surprised some government officials and economists, who questioned its validity.

In October 2016, the McKinsey Global Institute (MGI), a premier research institution, published a bellwether survey entitled "Independent Work: Choice, Necessity, and the Gig Economy" that came to a similar conclusion the U.S. gig workforce was significantly greater (68 million) than previously estimated. The MCI was also substantially large compared to other independent surveys, including MBO Partners (40 million), Burson-Marsteller (45 million), Kelly Services (50 million), and Freelancers Union (55 million).[133]

According to MGI, all the above online surveys indicated that between 25% and 35% of U.S. workers had engaged in non-standard or gig work on a supplementary or primary basis (full-time and part-time). Since large-scale public surveys, like those administered by the Bureau of Labor Statistics, tend not to ask about supplemental work, these private surveys are some of the best estimates of occasional gig workers.[134]

From a Jobenomics perspective, the Gig/Contingent Workforce Economy is creating an employment landscape that provides an opportunity for workers in the future economy were part-time and temporary workers outnumber full-time workers with standard workforce agreements. The gig/contingent workforce soon will be the dominant (50%) form of labor in the United States based on (1) the emerging digital economy, (2) revolution in digital and network technologies, (3) automation of manual and cognitive jobs, (4) shift from full-time to task-oriented labor, and (5) cultural differences of new labor force entrants.

Half (50%) of gig/contingent workers are below 35. According to labor force experts, new workforce entrants (e.g., Generation Z Screenagers and Generation Y Millennials) prefer contingent work over standard work. Some of these reasons include self-direction, variety, flexibility, skill development, and a general disillusionment with traditional corporate social compacts and promises that have proven to be short-lived with older generations. Millennials also understand that workforce growth is highly dependent on a growing economy, whereas contingent workforce growth is more resistant to economic fluctuations.

There is limited data on the earnings potential for contingent workers since gigs are often task-oriented. However, surveys indicate that gig workers are far more entrepreneurial (and slightly better educated) than traditional workers, which positions a select few to make it big. On the other hand, most digital natives have a different perspective on money and making it big. For

[133] McKinsey Global Institute, Independent Work: Choice, Necessity, and the Gig Economy. October 2016, https://www.mckinsey.com/~/media/mckinsey/featured%20insights/employment%20and%20growth/independent%20work%20choice%20necessity%20and%20the%20gig%20economy/independent-work-choice-necessity-and-the-gig-economy-full-report.pdf

[134] McKinsey Global Institute, Gig Economy Data Hub, How many gig workers are there?, https://www.gigeconomydata.org

example, most of the 1.7 million U.S. apps developers make no money in hopes of developing a marquee product in the Apple and Google Play Stores.

Since many contingent workers work gigs to supplement their income, they make more than their traditional counterparts in the same full-time job. People with technical skills often land lucrative supplemental gigs. Conversely, lower-skilled workers (day laborers, temp-agency, and on-call workers) often work low-paying gigs and live paycheck to paycheck.

The downside to full-time gig/contingent work is that workers are responsible for benefits like health insurance, which is the number one concern amongst freelancers. However, three-quarters of all independent survey respondents report being satisfied with gig work and want to continue their lifestyle of choice.

Freelancing is most common in higher-skilled creative and cultural industries such as content creators, computer programmers, and entertainment. The Freelancers Union is one of the leading gig/contingent workforce institutions. In 2019, Freelancers and Upwork (an American freelancing platform) commissioned Edelman Intelligence, an independent research firm, to conduct their sixth annual study of the U.S. freelance workforce.

Here are some of the most interesting statistics from the 2019 Freelancing in America survey from a career and startup business perspective.[135]

- 56.9 million Americans freelanced in 2019, representing 35% of the U.S. workforce.
    - **Independent contractors** (18.8 million or 33% of the independent workforce),
    - **Diversified workers** (17.1 million or 30%), people with multiple sources of income, such as Uber, coding, bartending, and dog-walking.
    - **Moonlighters** (14.8 million or 26%), people working outside their primary employer,
    - **Freelance business owners** (2.8 million or 5%), freelancers with employees, and
    - **Temporary workers** (3.4 million or 6%), individuals doing task-oriented work, like data entry.
- Freelancing makes up nearly 5% of GDP, more than the U.S. construction and transportation industries.
- The share of full-time freelancers increased from 17% in 2014 to 28% in 2019.
- 68% of freelancers started their business within the last five years.
- 66% would consider moving out of large congested urban areas with the same opportunities.
- 73% of skilled freelancers can work remotely compared to 27% of non-freelance workers.
- 76% of non-freelance workers would consider freelancing in the next recession.

[135] Freelancing in America: 2019, https://www.slideshare.net/upwork/freelancing-in-america-2019/1

- 51% say no amount of money would compel them to switch back to traditional employment.
- The most common type of freelance work is skilled services, with 45% of freelancers providing programming, marketing, and consulting skills.
- 60% of freelancers say they started freelancing by choice.
- 50% of all freelancers view freelancing as a long-term career choice.
- 53% of GenZ workers, ages 18-22, freelance.
- 71% feel that freelancing allows them to work from anywhere they choose.
- Freelancers are 18 percentage points more politically active than non-freelancers.
- 46% are caregivers (child, parent, elderly relative, or someone else).
- 91% of freelancers say the best days are ahead for freelancing, and 67% expect more income in 2020.

From a Jobenomics Digital Academy & Business Generator perspective, these stats are particularly noteworthy:

- **89% of freelancers wish education better prepared them for freelance work.**
- **52% would replace their college education entirely with training tailored to their current occupation.**
- 81% of all freelances want additional skills-based training. However, 57% say cost is a training barrier.
- The top three training areas freelancers want are **networking**, **new skills** in their field, and **starting and growing their freelance career/business**.
- 78% of freelancers agree that soft skills are equally important as technical skills.
- 77% say technology has made it easier to find freelance work. In addition, 66% receive projects online.
- In the last 6-months, 54% of freelancers received training, versus only 40% of non-freelancers.
- Skilled freelancers are even more likely, with 65% having done training in the last six months.
- 40% of all Moonlighters are considering full-time freelancing, which would create 5.9 million new independent contractors (either nonemployer or micro-businesses).

The Jobenomics Digital Academy & Business Generator will provide the certified skills-based training that the current and aspiring freelancers need. Students can receive training full-time, part-time, or online as required. The Academy will upskill lower-skilled temporary freelancers to help them pursue more profitable gigs or full-time professions. The Generator will help the Moonlighters make the transition to full-time freelancing. The Jobenomics Digital Academy & Business Generator will be a cost-effective haven for all job seekers to transition from joblessness to jobs to careers to independent business owners.

Healthcare, Social Assistance, and Jobenomics Direct-Care Initiative

Social Determinants of Health

Jobenomics is a Social Determinants of Health (SDOH) program from a healthcare perspective. Per the U.S. Department of Health and Human Services (HHS), social determinants of health are conditions where people live, learn, work, worship, and play that affect a wide range of health, functioning, and quality of life outcomes and risks. HHS launched its first Healthy People 1980 nationwide health promotion and disease prevention program. The Healthy People program has been updated and linked to specific milestones and healthcare objectives every decade since.[136]

Healthy People 2030 uses a community-based framework that outlines five SDOH domains:

(1) Economic stability
(2) Education access and quality
(3) Healthcare access and quality
(4) Neighborhood and built environment
(5) Social and community context

The Jobenomics Digital Academy & Business Generator addresses each of these domains.

Per the Healthy People 2030 website, SDOH impacts people's health, well-being, and quality of life. Examples of SDOH programs include:

- Safe housing, transportation, and neighborhoods
- Racism, discrimination, and violence
- Education, job opportunities, and income
- Access to nutritious foods and physical activity opportunities
- Polluted air and water
- Language and literacy skills

By focusing on underserved and under-resourced communities, Jobenomics deals with various health, well-being, and quality of life issues. Jobenomics has numerous turnkey programs that provide immediate solutions to beleaguered neighborhoods' most pressing and urgent problems. In addition to the Jobenomics Digital Academy & Business Generator, examples of other Jobenomics turnkey programs include:

- Affordable Live/Work/Retire Communities
- Infectious Disease Testing, Diagnostics, Biosafety Labs & Hygienic Facility Services
- Direct-Care (Healthcare, Behavioral Care, Eldercare, Childcare, and Social Assistance)
- Controlled Environment Agriculture in Food Deserts
- Enriched Super Oxygenated Water for Drinking, Agriculture & Remediation
- Renewable Energy & Energy Services and Waste-To-Value Systems

[136] U.S. Department of Health and Human Services, Healthy People 2030, Social Determinants of Health, https://health.gov/healthypeople/objectives-and-data/social-determinants-health

Healthcare, Social Assistance & Direct-Care Overview

Enabled by digital technology and driven by economics, direct-care is rapidly augmenting outpatient and inpatient services. Direct-care workers constitute one of the largest and fastest-growing workforces in the country, playing a vital role in job creation and economic growth, particularly in low-income communities.

Healthcare and social assistance employment grew by 3 million positions over the last decade and currently has 1.3 million open jobs. Over the upcoming decade, the U.S. Bureau of Labor Statistics anticipates 2.5 million new jobs, not including the need to replace 7 million workers retiring or exiting this labor force.

Due to low wage rates, the turnover rates for healthcare and social assistance tend to be very high. The Jobenomics Digital Academy has ways to keep the pipeline full and career paths designed to shepherd entry-level workers quickly through the minimum wage stage.

Traditional healthcare providers also struggle to meet demand with limited financial and human resources. In addition to hospitals, direct-care workers provide essential services in group homes, residential care facilities, assisted living facilities, continuing care retirement communities, nursing homes, group homes, and private homes. The revolution in digital healthcare and social assistance technologies has created enormous career and startup business opportunities to service this wide array of direct-care consumers.

Consequently, the Jobenomics Direct-Care Initiative is a way to meet these needs via mass-producing careers and startup businesses in unserved and underserved neighborhoods with limited access to quality care.

Due to rapid advances in digital technologies and the high cost of institutionalized care, the healthcare industry is evolving from centralized inpatient care to outpatient (ambulatory) care to delivering on-demand healthcare services at the point of need. A Jobenomics Direct-Care program will provide point-of-need healthcare, social assistance, behavioral-care, elder-care, and child-care services. It also can be expanded to include addressing social issues such as caring for the homeless.

The Jobenomics Digital Academy & Business Generator will play a supporting role by implementing certified direct-care skills-based training and mass-producing home-based businesses to provide remote direct-care.

Healthcare & Social Assistance

According to the U.S. Bureau of Labor Statistics (BLS), the Healthcare and Social Assistance sector comprises establishments providing health care and social assistance. The sector includes both health care and social assistance because it is sometimes difficult to distinguish between the boundaries of these two activities. The industries in this sector are arranged on a continuum, starting with establishments providing medical care exclusively, providing health care and social assistance, and finally finishing with those providing only social services.

Top-20 Occupations With The Most New Jobs: 2019 to 2029

Source: U.S. Bureau of Labor Statistics[137]

Rank	Occupation	Projected Number of New Jobs 2019-2029	2020 Median Annual Salary
1	**Home health and personal care aides**	**1,159,500**	**$27,080**
2	Fast food and counter workers	460,900	$23,860
3	Cooks, restaurant	327,300	$28,800
4	**Software developers and software quality assurance analysts and testers**	**316,000**	**$110,140**
5	**Registered nurses**	**221,900**	**$75,330**
6	**General and operations managers**	**143,800**	**$103,650**
7	**Medical assistants**	**139,200**	**$35,850**
8	**Medical and health services managers**	**133,200**	**$104,280**
9	Market research analysts and marketing specialists	130,300	$65,810
10	Laborers and freight, stock, and material movers, hand	125,700	$31,120
11	Landscaping and groundskeeping workers	119,900	$31,730
12	**Nursing assistants**	**116,900**	**$30,850**
13	**Nurse practitioners**	**110,700**	**$111,680**
14	Financial managers	108,100	$134,180
15	**Janitors and cleaners, except maids and housekeeping cleaners**	**105,600**	**$29,080**
16	Waiters and waitresses	97,600	$23,740
17	Passenger vehicle drivers, except bus drivers, transit and intercity	94,400	$32,320
18	Management analysts	93,800	$87,660
19	Project management specialists and business operations specialists	79,800	$77,420
20	**Substance abuse, behavioral disorder, and mental health counselors**	**79,000**	**$47,660**
	Heathcare & Social Assistance Related New Jobs (Highlighted)	**2,525,800**	
	Currently Open (June 2021) Healthcare & Social Assistance Jobs	**1,319,000**	

[137] U.S. Bureau of Labor Statistics, Occupational Outlook Handout, Most New Jobs: 20 occupations with the highest projected numeric change in employment, https://www.bls.gov/ooh/most-new-jobs.htm, and, Economic News Release, Table 7. Job openings levels and rates by industry and region, not seasonally adjusted, 8 June 2021, https://www.bls.gov/news.release/jolts.t07.htm

According to the BLS Occupational Outlook Handout, over the next decade (2019-2029), ten of the projected Top-20 fastest-growing occupations (highlighted in yellow) involve healthcare and social assistance, producing an estimated 2,525,800 new jobs. This total does not include the open 1,319,000 (as of the June 2021 BLS JOLTS report) Healthcare & Social Assistance jobs. In 2020, the median average salary for these ten occupations ranged from a low of $27,080 (home health and personal care aids) to $11,680 (nurse practitioners).

U.S. Healthcare & Social Assistance Employment: June 2011 to June 2021

Source: U.S. Bureau of Labor Statistics[138]

		1-Jun-11	1-Jun-21	Job Growth 2011-2021	% Average Growth/Yr	Week Earnings 2020	
		Jobs (000s)				All	Production and Non Supervisory
Healthcare & Social Assistance	**NAICS 62**	**17,024**	**20,022**	**2,998**	**1.5%**		
Ambulatory Healthcare Services	**NAICS 621**	**6,106**	**7,798**	**1,692**	**2.3%**		
Offices of Physicians	NAICS 6211	*2,286*	*2,692*	*406*	1.5%		
Offices of Dentists	NAICS 6212	*842*	*689*	*-153*	***-1.5%***		
Offices of Other Health Practitioners	NAICS 6213	*693*	*979*	*287*	***3.4%***	**$34.33**	**$29.20**
Outpatient Care Centers	NAICS 6214	*668*	*1,005*	*337*	***4.2%***		
Medical and Diagnostic Laboratories	NAICS 6215	*232*	*296*	*64*	***2.3%***		
Home Healthcare Services	NAICS 6216	*1,129*	*1,503*	*375*	***2.8%***		
Other Ambulatory Healthcare Services	NAICS 6219	*257*	*316*	*59*	*1.9%*		
Hospitals	**NAICS 622**	**4,716**	**5,147**	**431**	**0.8%**	**$36.07**	**$34.92**
Nursing & Residential Care Facilities	**NAICS 623**	3,166	3,039	-127	***-0.3%***		
Nursing Care Facilities	NAICS 6231	*1,670*	*1,384*	*-286*	***-1.4%***		
Residential Mental Health Facilities	NAICS 6232	*568*	*607*	*39*	*0.6%*	**$20.79**	**$18.61**
Elderly Community Care Facilities	NAICS 6233	*771*	*899*	*128*	*1.4%*		
Other Residential Care Facilities	NAICS 6239	*158*	*149*	*-9*	***-0.5%***		
Social Assistance	**NAICS 624**	**3,035**	**4,038**	**1,003**	**2.8%**		
Individual and Family Services	NAICS 6241	*1,693*	*2,656*	*963*	***4.7%***		
Emergency and Other Relief Services	NAICS 6242	*145*	*187*	*42*	***2.4%***	**$18.97**	**$16.82**
Vocational Rehabilitation Services	NAICS 6243	*345*	*283*	*-63*	***-1.5%***		
Child Day Care Services	NAICS 6244	*851*	*912*	*61*	0.6%		
	Color Key	*Lost Jobs*	*≤ Than Decade Average GDP 2.3% Growth*				*Above GDP*

Over the last decade (June 2011 to June 2021), the U.S. Healthcare and Social Assistance sector added 2,998,000 jobs—the largest of any U.S. sector. As shown, of the 19 listed subcategories (subsectors and industry groups), eight grew faster than the average GDP growth rate of 2.3% during this period (Gross Domestic Product is the best measure of the health of the U.S. economy), seven grew below average, and five lost jobs.[139]

[138] U.S. Bureau of Labor Statistics, Establishment Data, Table B-1. Employees on nonfarm payrolls by industry sector and selected industry detail, https://www.bls.gov/webapps/legacy/cesbtab1.htm, and, Industries at a Glance, Health Care and Social Assistance: NAICS 62, https://www.bls.gov/iag/tgs/iag62.htm#about

[139] Note: The BLS nomenclature for a two-numbered NAICS code (NAICS 62) is "sector," a three-numbered NAICS code (NAICS 621) is a "subsector," and a four-numbered NAICS code (NAICS 6211) is an "industry group." These Codes are all part of the Service-Providing Industries "supersector group" and the Education and Health Services "supersector."

The Healthcare and Social Assistance sector consists of four subsectors. Over the last decade, Social Assistance was the fastest growing sector with an average annual growth rate of 2.8%, producing 1,003,000 new employment positions. The Ambulatory Healthcare Services sector was the star in job creation with 1,692,000 new jobs with an average growth rate of 2.3%. The Hospitals sector was a slow grower with only 0.8% growth and 431,000 new jobs. The Nursing and Residential Care Facilities was the big loser with -0.3% growth and 127,000 lost jobs.

- **Ambulatory Healthcare Services Subsector (NAICS 621).** Ambulatory care or outpatient care is medical care provided on an outpatient basis, including diagnosis, observation, consultation, treatment, intervention, and rehabilitation services. This care can include advanced medical technology and procedures even when provided outside hospitals.

  The Offices of Physicians industry group (NAICS 6211) produced the most new jobs (406,000) during the last decade but was one of the slowest growing (1.5%) in the entire sector. To a large extent, practitioners are replacing physicians. The use of technology during the pandemic will continue to accelerate the shift from doctor offices to remote and online care.

  According to the Association of American Medical Colleges, the United States could see a shortage of up to 121,900 physicians by 2030, which poses a "serious threat" to patient care in a nation that will continue to grow and age considerably over the next 11 years. By 2030, the U.S. population should grow over 10%, from 326 million to 359 million. Moreover, pediatric (under 18) and geriatric (over 65) care will change dramatically due to aging. As a percentage of the U.S. population, seniors are increasing 14-times faster than their younger counterparts (48.0% versus 3.5%).[140]

  To mitigate the physician shortage and the higher demand for elder care, the Jobenomics Direct-Care Initiative (addressed later) plans to implement proven telehealth and AI assistant apps to reduce the number of doctor visits by creating a cadre of remote and on-demand practitioners.

  Outpatient Care Centers (NAICS 6214) grew the fastest at 4.2% per annum, producing 337,000 new jobs. Offices of Other Health Practitioners came in second with 3.4% annual growth and 287,000 jobs. Offices of Other Health Practitioners (NAICS 6213) include Chiropractors, Optometrists, Mental Health Practitioners (except Physicians); Physical/ Occupational/Speech Therapists, and Audiologists who usually practice in small offices, walk-in centers, or clinics. The Home Healthcare Services (NAICS 6216) was third, growing at 2.8% and producing 375,000 new jobs.

[140] Association of American Medical Colleges, 2019 Update. The Complexities of Physician Supply and Demand: Projections from 2017 to 2032, April 2019, https://aamc-black.global.ssl.fastly.net/production/media/filer_public/31/13/3113ee5c-a038-4c16-89af-294a69826650/2019_update_-_the_complexities_of_physician_supply_and_demand_-_projections_from_2017-2032.pdf

NAICS 6213 through 6219 are the primary areas of the Jobenomics Direct-Care Initiative. These industry groups comprise establishments primarily engaged in providing skilled nursing services in the home, personal care services, 24-hour home care, homemaker and companion services, physical therapy, medical social services, medications, medical equipment and supplies, counseling, occupation and vocational therapy, dietary and nutritional counseling, and high-tech care, such as intravenous therapy.

- **Nursing and Residential Care Facilities Subsector (NAICS 622).** In the Nursing and Residential Care Facilities subsector, the worst performers were Nursing Care Facilities (NAICS 6231), with a negative -1.4% growth rate and a loss of 127,000 jobs. Residential Mental Health Facilities (NAICS 6231) and Other Residential Care Facilities (NAICS 6239) performed poorly (0.6% and a negative 0.5%, respectively). Elderly Community Care Facilities (NAICS 6233) created 128,000 jobs and was a booming industry group until COVID-19.

  Elder-Care (assisted living, managed care, skilled care, and hospice care) is another area of the Jobenomics Direct-Care Initiative. The difference between Community Care Facilities For the Elderly and Jobenomics Elder-Care is that the former requires public or private facilities, and the latter provides in-home services. In-home residential care will grow exponentially over the next decade due to retiring baby boomers, the wealthiest American living generation, who can afford in-home services.

  By 2020 older Americans are projected to need 20 million assisted- or managed-care beds. Today, only 3 million beds are available nationwide. Unfortunately, nationwide Nursing and Residential Care Facilities are shrinking, which places aging baby boomers in a precarious position. Building new assisted-care facilities is not the answer for financially strapped senior citizens who cannot afford the typical $10,000/per month fees. In-home services will be needed and will grow at 15% per year.

  According to the U.S. Government Accountability Office (GAO), half of all baby boomers aged 55 and older have no retirement savings. The remaining half has meager nest eggs to support their retirement. Among those with some retirement savings, the median savings are only $104,000 for households aged 55 to 64. Consequently, most baby boomers will have to rely on social security, which only provides necessities. Furthermore, according to the Economic Policy Institute data, pension pots for future retirees are even bleaker, with median pension pots of only $8,000 for Americans aged 50 to 55 and $6,200 for Americans aged 44 to 49.

  The combination of declining birth rates and living longer makes elder-care a more significant challenge as age-related infirmities (Alzheimer's disease, dementia, and chronic illnesses) become more pronounced across the United States.

- **Hospitals Subsector (NAICS 623).** While hospitals added 431,000 jobs this decade, hospital employment grew at a tepid rate of 1.3% per annum during a decade of positive economic growth and growing healthcare demand.

Due to rising healthcare costs, hospitals face various financial challenges, including recruiting and retaining physicians and skilled medical professionals, maintaining profitability, and caring for patients with inadequate medical insurance. Emergency Rooms and Psychiatric Hospitals are severely overextended.

- **Social Assistance Subsector (NAICS 624).** Government-sponsored assistance programs, also called welfare or means-tested programs, limit eligibility to individuals and families whose incomes and or assets fall below a pre-determined threshold (means test). Recipients must prove their income falls below a target.

  NAICS 624 includes Individual and family services, community food and housing, emergency and other relief services, vocational rehabilitation services, and child day-care services. Social Assistance programs (also called safety net and need-tested programs) include tax credits for low- and moderate-income working families and various programs that provide cash payments to eligible individuals or households.

  The six major social assistance programs are TANF, EITC, Housing Assistance, Medicaid/CHIP, SNAP, and SSI.

  - TANF (Temporary Assistance for Needy Families) is the program that is most often associated with "welfare" since it provides additional income to more than 2 million Americans (mostly with children) living in poverty.
  - ETIC (Earned Income Tax Credit) is a tax credit for low-income families. Housing assistance is usually rental assistance vouchers to keep low-income families from spending more than 30% on rent.
  - Medicaid and its Child's Health Insurance Program (CHIP) help people and families with limited financial resources get healthcare.
  - SNAP (Supplemental Nutrition Assistance Program) is, commonly known as food stamps, provided supplemental food assistance to 38 million Americans in 2021. SNAP's Special Supplemental Food Program for Women, Infants, and Children (WIC) helps pregnant, postpartum, and breastfeeding women and children up to age five with food, voucher, education, and referral services. One in five U.S. children participates in SNAP.
  - SSI (Supplemental Security Income) provides extra cash to help 8 million low-income adults and children who live with disabilities.

  Social assistance programs are different from entitlement programs. One must prove eligibility to receive social assistance program benefits. In contrast, anyone can access entitlement programs if they have contributed to the program (often through payroll taxes). The four major U.S. entitlement programs include Social Security, Medicare, Unemployment insurance, and Worker's compensation.

The latest Congressional Research Service (CRS) study stated that the cost of 83 federal welfare programs amounted to $1.03 trillion in 2011.[141] According to USGovernmentSpending.com, a watchdog group, in 2019, Medicaid spending was $613 billion, and other welfare was $468 billion for $1.03 trillion. Then the pandemic hit. In 2020 Medicaid spending increased slightly to $687 billion (+12%), and other welfare soared to $1,203 billion (+157%) for $1.9 trillion.[142]

COVID-Era Federal Stimulus Programs

Source: Various, The White House, U.S. Congress, COVID Money Tracker

Status	Program	$ Trillions
Trump & Biden Administrations		
Enacted	COVID Legislative (Congress) Acts	$5.9
	COVID Federal Reserve (Central Bank) Actions	$6.5
	COVID White House Actions	$0.9
		$13.3
Biden Administration "Build Back Better" Plan		
Enacted	American Rescue Plan (COVID-19 Stimulus Package)	$1.9
Proposed	American Jobs (Infrastructure) Plan	$2.6
	American Families (Childcare & Education) Plan	$1.7
Democrat Legislative (Congress) Reconciliation Bill		
Proposed	Medicare ("Human Infrastructure") Expansion	$3.5
		$23.0

According to an analysis by the Committee for a Responsible Federal Budget, the U.S. government's enacted fiscal response to mitigate COVID economic and workforce damage is $13.3 trillion, of which $8.77 trillion is committed/distributed, and $4.6 trillion remains.[143]

An additional $9.7 trillion of enacted and proposed spending is also underway. The proposed $3.5 trillion Reconciliation Bill is dedicated to solving healthcare and social assistance inequities. **In other words, trillions of dollars worth of "new money" are available for healthcare and social assistance-related initiatives.**

Direct-Care Home-Based Businesses For In-Home/Remote Care

Direct-care workers constitute one of the largest and fastest-growing workforces in the country, playing a vital role in job creation and economic growth, particularly in low-income communities.

[141] CRS Report: Welfare Spending The Largest Item In The Federal Budget, https://www.budget.senate.gov/imo/media/doc/CRS%20Report%20-%20Welfare%20Spending%20The%20Largest%20Item%20In%20The%20Federal%20Budget.pdf

[142] USGovernmentSpending.com, Christopher Chantrill, Recent Welfare Spending, https://www.usgovernmentspending.com/welfare_spending

[143] Committee for a Responsible Federal Budget, COVID Money Tracker,

In addition to hospitals, direct-care workers provide essential services in residential care facilities, assisted living facilities, continuing care retirement communities, nursing homes, group homes, and private homes. The revolution in digital healthcare and social assistance technologies has created enormous career and startup business opportunities to service this wide array of direct-care consumers.

According to PHI, a research and policy institute dedicated to quality care for older adults and the disabled, the direct-care workforce comprises about 4.5 million workers, growing by 1.3 million jobs over the next decade. 85% (1.1 million) of these new positions involve home care. Simultaneously, the United States will need a further 6.9 million direct care jobs to fill vacancies as existing workers leave the field or exit the labor force. Direct care workers include personal care aides, home health aides, and nursing assistants. [144]

Per the BLS Occupational Outlook Handbook (OOH), entry-level educational requirements for home health and personal care aides are high school degrees or equivalent certificates. The median pay for both occupations in 2020 was $13.02 per hour—a paltry sum that causes high turnover rates. On the flip side, the 3.4 million home health and personal care aide employment is growing "much faster" (34%) than the national average, making these ideal entry-level positions for a career in healthcare and social assistance.

The OOH states that nursing assistants (and orderlies) often need to complete a state-approved education program that includes instruction on nursing principles and supervised clinical work. These programs are available in high schools, community colleges, vocational and technical schools, hospitals, and nursing homes. The 2020 median pay for nursing assistants and orderlies was also paltry at $14.82 per hour. This career field currently employs 1.6 million people and has a growth rate " much faster" (8%) than average

According to PHI, a comprehensive assessment of high turnover rates with direct-care givers does not exist. However, PHI's literature reviews on this topic show turnover rates of around half the people leave these career fields, both within and outside the healthcare and social assistance sector.

Due to low wage rates, the turnover rates for healthcare and social assistance tend to be very high. Jobenomics asserts that its Digital Academy can substantially reduce the turnover sting to employers and employees. The Jobenomics Digital Academy & Business Generator has ways to keep the direct-care giver pipeline filled and career paths designed to shepherd entry-level workers quickly through the minimum wage stage.

- To start, every Academy graduate will have their own company (either a sole-proprietorship or an S-Corp) that will allow them to work as an independent contractor. Most direct-care companies (hospitals, residential care facilities, assisted living facilities, continuing care

[144] PHI, Understanding the Direct Care Workforce, Key Facts, http://www.phinational.org/policy-research/key-facts-faq/

retirement communities, nursing homes, and group homes) and private-duty home care agencies prefer subcontracting (1099) to hiring (W2).

- Subcontracting can lead to establishing a business (multiple 1099s) or eventually to a full-time job (W2). Both the employer and potential employee/subcontractor will get to know each other before committing.
- Most independent contractor companies will start as home-based, self-employed (nonemployer) enterprises.
    - This type of firm is ideal for part-time workers who want to top off their income or work part-time by choice. Most Millennials and Screenagers (Gen Z) prefer to have multiple part-time jobs such as caregiving, Uber/Lyft driving, and content creating.
    - Home-based direct-care giving is ideal for former mothers and female heads of households interested in joining the workforce after the children are grown. Most families in underserved communities tend to be headed by mothers who possess caregiving (maternal) and administrative (household) direct-care skills.
- Finally, the Jobenomics Digital Academy & Business Generator will provide mentoring and career counseling services via lifelong applied learning and transformation mapping programs. The era when a person worked a lifetime for the same employer is long over. A successful entry-level job as a direct-care giver can lead to multiple career opportunities in healthcare and elsewhere.

Many factors will lead to job growth in direct-care technology development as well as direct-care business and job creation: (1) growing population, (2) extended life expectancy and declining birthrates, (3) chronic and age-related disease growth, (4) improved service-providing technology, and (5) ever-expanding healthcare, social assistance, and welfare programs.

Traditional healthcare businesses are grappling with shifting consumer expectations and searching for ways to improve their supply chains to deliver goods and services quickly. Consumer demand for personalized time-saving service and innovations in digital app-based matching technologies enable the rise in direct-care services and shift power away from centralized inpatient and outpatient providers to consumers.

Due to rapid advances in digital technologies and the high cost of institutionalized care, the healthcare industry is evolving from centralized inpatient care to outpatient (ambulatory) care to delivering on-demand healthcare services at the point of need.

Enabled by digital technology and driven by economics, direct-care is rapidly augmenting outpatient and inpatient services. The Jobenomics Direct-Care Initiative provides direct care to local citizens, emphasizing unserved and underserved neighborhoods with limited access to quality care.

Jobenomics Direct-Care Initiative

In its sixth year, the Future Healthcare Index 2021 is the largest global survey analyzing responses from almost 3,000 healthcare leaders during the pandemic across fourteen countries. The paramount response from these leaders is that the pandemic prompted the healthcare industry to **focus on remote or virtual care**—the underlying technology in the Jobenomics Direct-Care Initiative.[145] Per the 2021 Future Healthcare Index report,

- "Healthcare leaders ranked preparing to respond to crises as their top priority, followed by facilitating a shift to remote or virtual care. This includes remote monitoring for hospital inpatients and outpatients and telehealth consultations between healthcare professionals and clinicians. Those in India, **the United States**, and the Netherlands are more likely than their peers across many countries surveyed to prioritize this shift."[146]

- Remote, virtual, at-home, and direct-care involve sustainable care beyond hospital walls. Surveyed healthcare leaders anticipate that routine care delivery outside of the walls of a hospital or healthcare facility will increase by 25% over the next three years (2021 to 2024). Ambulatory primary care centers and long-term rehab facilities will be the top locations. However, home-based care, pharmacies, community centers, and other retail stores will become prominent healthcare outlets. [147]

- The emerging digital technology revolution will make hospitals and inpatient healthcare facilities "smarter." Per the Index report, "as adoption of (digital) technology increases, so too does the expected percentage of care delivered outside of hospital walls three years from now." This shift will enable underserved rural and under-resourced urban neighborhoods access to quality healthcare.

- According to a hospital owner in India, "**Providing home care, mobile machines, and sending the hospital to the patient, is the future**." The Jobenomics Direct-Care Program provides all three of these services.

The Jobenomics Direct-Care initiative program provides point-of-need healthcare, social assistance, behavioral-care, elder-care, and child-care services. It also can be expanded to include addressing social issues such as caring for the homeless. The Jobenomics Digital Academy & Business Generator will play a supporting role by implementing certified direct-care skills-based training and mass-producing home-based businesses to provide remote direct-care.

[145] Philips, Future Healthcare Index 2021, A resilient future, Healthcare leaders look, beyond the crisis, https://www.philips.com/a-w/about/news/future-health-index/reports/2021/healthcare-leaders-look-beyond-the-crisis.html
[146] Ibid, Page 6
[147] Ibid Page 16

The Jobenomics Direct-Care Initiative includes the creation Direct-Care Centers. These centers provide in-home services from local small, micro, and self-employed businesses managed by community-based direct-care centers equipped with the latest information systems connected to a network replete with remote sensing, telehealth, real-time teleconferencing, voice tech, and mobile phone direct-care apps.

A Jobenomics Direct-Care Center will train, certify, manage, deliver, monitor, and mass-produce direct-care startup businesses linked via new telehealth networks to more experienced practitioners in outpatient and inpatient centers. A Direct-Care Center would also provide education, training, certification, quality control, ICT (information and communication technologies), and EMT (emergency medical technician) related services for the community.

In addition to training and certifying basic caregiving skills, a Direct-Care Center provides proper regulatory oversight and quality control. The Direct-Care Center would also work with larger established businesses that provide services higher up the skills chain. Small and self-employed companies can provide essential services more efficiently than larger businesses, which is extremely important to citizens who cannot afford current caregiving offerings.

Jobenomics Direct-Care Initiative Services & Center

- **Direct-Care Services** include:
  - **Healthcare** and **social assistance**, the fastest growing occupations in the USA.
  - **Behavioral-care** includes drug addition, PTSD, obesity, spousal abuse, chronic illness, etc.
  - **Elder-care** forecasts 17 million assisted-living bed shortfall by 2020.
  - **Child-care** is the single biggest cost keeping women homebound.

- **Direct-Care Center** would connect service providers and clients via a **call and information center**. The center would start **home-based firms** certified to provide **in-home services** while connected to tele-health and other providers.

The Jobenomics Direct-Care Initiative involves direct-care services by home-based micro and self-employed businesses via a community-based direct-care center. Direct-care occupations will increase by many millions of new jobs due to the need for cost-effective healthcare, social assistance, behavioral-care, elder-care, and child-care services.

The inability of traditional institutions (like hospitals and community care facilities) to service the ever-growing medical, health, and societal needs of America's urban and rural poor exacerbated the demand for remote direct-care services. Rapid advances in digital technologies and the high cost of traditional care allow medical, health, and social assistance industries to evolve from

centralized inpatient care to outpatient (ambulatory) care to deliver on-demand services directly at the point of need.

The Jobenomics Digital Academy & Business Generator will concentrate on the fasting-growing industry groups in the Healthcare & Social subsector. The fastest-growing industry groups are Individual and Family Services (4.7% YoY growth, decade total of 963,000 new jobs with a mean salary of $17.47/hour as of May 2020), Outpatient Care Centers (4.2% YoY growth, decade total of 337,000 new jobs with a mean wage of $33.76/hour), and Home Healthcare Services (2.8% growth and 375,000 new jobs with mean pay $20.16/hour).[148]

- Individual and Family Services (NAICS 6241) provide nonresidential social assistance, hotline, and counseling services for children, youth, the elderly, family, and people with disabilities.
- Outpatient Care Centers (NAICS 6214) offer outpatient services, such as family planning, diagnosis and treatment of mental health disorders and alcohol and other substance abuse, and other general or specialized outpatient care.
- Home Healthcare Services (NAICS 6216) comprises establishments primarily engaged in providing skilled nursing services in the home, along with a range of the following: personal care services; homemaker and companion services; physical therapy; medical social services; medications; medical equipment and supplies; counseling; 24-hour home care; occupation and vocational therapy; dietary and nutritional services; speech therapy; audiology; and high-tech care, such as intravenous therapy.

Jobenomics predicts that these three categories will continue to soar during the post-pandemic recovery period. The long-term effects of prolonged periods of unemployment, quarantines, stay-at-home restrictions, and anxiety will increase demand for healthcare, social assistance, and behavioral care services for years to come.

Behavioral-care includes promoting well-being by preventing or intervening in mental illness such as depression or anxiety and preventing or intervening in substance abuse or other addictions. Behavioral care emphasizes the individual changing or adapting to environmental factors (poverty, discrimination, or abuse) that enhance the individual's ill-being.

Drug and substance abuse is now off the charts. Nielson reports liquor (1.75-liter spirits) sales were 23-times higher during the pandemic. While underreported during the lockdown, excessive numbers of spousal and child abuse cases are surfacing. Rather than decreasing, mental, depressive, and anxiety disorders seem to be growing worse during the so-called recovery period.

Jobenomics Digital Academy & Business Generator will train, certify, manage, deliver, monitor, and mass-produce direct-care startup businesses linked via new telehealth networks to more

[148] Mean salary statistics from BLS Occupational Employment and Wage Statistics, May 2020, https://www.bls.gov/oes/current/naics4_624100.htm, https://www.bls.gov/oes/current/naics4_623100.htm, https://www.bls.gov/oes/current/naics4_621600.htm

experienced practitioners in outpatient and inpatient centers. In addition to mass-producing direct-care startup businesses and jobs, a Direct-Care Center would also provide education, training, certification, quality control, ICT (information and communication technologies), and EMT (emergency medical technician) related services for the community.

Direct-care occupations are increasing with many millions of new jobs—financed by government programs like the American Rescue Plan, Medicare, and Medicaid. As exacerbated by the pandemic, traditional institutions (like hospitals and community care facilities) cannot satisfy the urban poor's ever-growing medical, healthcare, and societal needs. Advances in digital and network technologies (like telehealth and telemedicine) have enabled healthcare and social assistance to be provided remotely by online service providers.

Graying Of The U.S. Labor Force

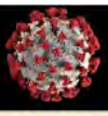
The American labor force is graying. Due to an aging population and lower replenishment rates (births), the American workforce is getting grayer. The median age of the labor force was 37.7 in 1996 and should be 40.1 in 2035. Today, the United States has 61% more older adults (98.8 million people 55 and over) than children (61.4 million under 15). [149]

Although declining fertility plays a role, the driving force behind America's aging is the baby boomers. The latest Census 2020 dependency ratio data released in June 2020 shows the U.S. 65-and-older population grew by 34.2% or 13,787,044 since 2010, driven by the aging of Baby Boomers born between 1946 and 1964. Over the last century, the average American life expectancy doubled from 39 in 1850 to 78.8 in 2019.

U.S. COVID-19 Death Counts By Age

Provisional Death Counts 1/1/2020 to 7/21/2021

Source: U.S. Centers for Disease Control and Prevention[150]

All Sexes Age Group	Deaths Involving COVID-19		
All ages	601,124	100.0%	**100.0%**
Under 1 year	82	0.014%	***Youth*** **0.2%**
1–4 years	40	0.007%	
5–14 years	117	0.019%	
15–24 years	1,010	0.168%	
25–34 years	4,396	0.7%	***Prime*** **7.7%** ***Working-Age***
35–44 years	11,166	1.9%	
45–54 years	30,856	5.1%	
55–64 years	76,729	12.8%	***Older &*** **92.1%** ***Elderly***
65–74 years	134,045	22.3%	
75–84 years	164,532	27.4%	
85 years+	178,151	29.6%	
Seniors 55+	**553,457**	**92.1%**	*About 1% of the total Senior population*
Seniors 65+	**476,728**	**86.1%**	

Jobenomics developed this table from recent CDC Provisional Death Counts based on incoming death certificates. The data shows that of the 601,124 COVID-19 deaths recorded from 1 January

[149] U.S. Census Bureau, Projections by age and sex composition of the population, Table 3, retrieved 22 July 2021, https://www.census.gov/data/tables/2017/demo/popproj/2017-summary-tables.html

[150] U.S. Centers for Disease Control and Prevention, National Center for Health Statistics, Provisional Death Counts for Coronavirus Disease 2019 (COVID-19), retrieved 23 July 2021, https://www.cdc.gov/nchs/nvss/vsrr/covid_weekly/index.htm

2020 to 21 July 2021, 92.1% or 553,457 deaths were American seniors over 55 years. For seniors 65+, the Grim Reaper claimed 476,728 lives, or 86.1% of all Americans. As a percent of the total senior population, about 1 out of every 100 seniors died from the coronavirus—a statistic not yet included in the longevity projections.

Due to the pandemic, U.S. life expectancy plunged by 1.5 years to 77.3 in 2020— the most sizeable one-year decline since World War II, when life expectancy dropped by 2.9 years between 1942 and 1943. Of all racial and ethnic groups, Hispanic males suffered the most significant one-year decline, with a drop of 3.7 years. Jobenomics estimates that the impact on seniors may be less severe on longevity than on Hispanic males due to higher vaccination rates.

On the other hand, seniors are more likely to suffer the long-term crippling effects of infection. As of this writing, the total number of U.S. COVID-19 cases is 56-times greater than deaths (34.3 million versus 610 thousand). Consequently, the economic and workforce impact of COVID-cripples could be dramatic.

The lifespans of American seniors have increased to the point that it is approximately 33% higher since President Franklin D. Roosevelt proposed a Social Security system in response to the Great Depression.

The U.S. Social Security Act of 1935 created a social insurance program designed to pay retired workers age 65 a continuing income after retirement. Amendments to the Social Security Act in 1983 enacted an increase in the retirement age from 65 to 67. Early retirement benefits are available at age 62 with reduced benefits. If a person delays retirement, they receive an additional 8% benefit each year until age 70, making total benefits 32% higher.[151]

U.S. Social Security program costs exceeded revenue in 2018, forcing the Social Security Administration to use its $3 trillion trust fund to cover benefit costs. According to the Social Security and Medicare trustees, the Social Security Trust Fund will be depleted **by 2030**. Once exhausted, the trust fund will reduce scheduled benefits to meet revenues unless Congress allocates more money or amends the current system.

According to the U.S. Census Bureau, 2030 marks a turning point for the United States for three **demographic** reasons.

(1) All 71 million baby boomers will be older than 65, making one in every five Americans retirement age. By 2034, the Bureau projects that older adults outnumber children for the first time in U.S. history.

[151] U.S. Social Security Administration, Retirement Age: Background, https://www.ssa.gov/planners/retire/background.html

(2) Because of population aging, immigration will overtake natural increase (the excess of births over deaths) as the primary driver of U.S. population growth. As the population ages, the number of deaths will rise substantially, slowing the country's natural growth rate.

(3) Net international migration should overtake natural increase, even as levels of migration remains relatively flat.

These three demographic milestones will make the 2030s a transformative decade for the U.S. population. After 2030, the U.S. population should grow slowly, significantly age, and become more racially and ethnically diverse. Despite slowing population growth, the U.S. population likely will increase to 79 million people by 2060, crossing the 400-million threshold in 2058. This continued growth sets the United States apart from other developed countries, whose populations will stagnate or contract over the coming decades. [152]

One of the critical metrics to gauge the effects of aging are dependency ratios. A dependency ratio is a demographic measure of the proportion of dependents of a country or region's total working-age population. Dependency ratios measure the age structure and estimate the number of individuals that are likely to be economically "dependent" on the support of others.

The CIA World Factbook calculates various dependency ratios **as a national security matter**. The CIA's dependency ratios include Total, Youth, Elderly (old-age), and Potential Support.

- **Total Dependency Ratio** is the ratio of the combined youth population (ages 0-14) and elderly population (ages 65+) per 100 people of working age (ages 15-64). A high total dependency ratio indicates that the working-age population and the overall economy face a significant burden to support and provide social services for youth and the elderly, who are often economically dependent.

- **Youth Dependency Ratio** is the ratio of the youth population (ages 0-14) per 100 people of working age (ages 15-64). A high youth dependency ratio indicates that schooling and other services for children will need greater investments and funding.

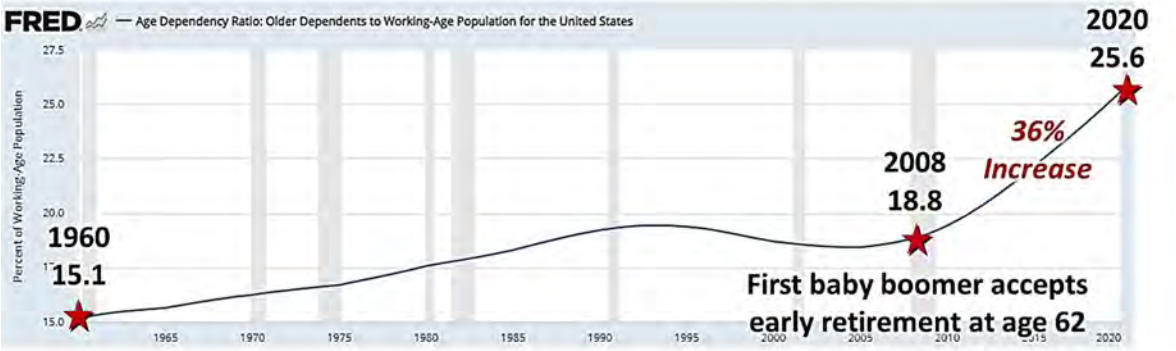
- **Elderly Dependency Ratio** is the elderly population (ages 65+) ratio per 100 people of working age (ages 15-64). Increases in the elderly dependency ratio add pressure on governments to fund pensions and healthcare.

- **Potential Support Ratio** is the number of working-age people (ages 15-64) per older adult (ages 65+). A support ratio tends to fall as the population ages, meaning fewer potential workers support the elderly.[153]

[152] U.S. Census Bureau, Demographic Turning Points for the United States: Population Projections for 2020 to 2060, February 2020, https://www.census.gov/content/dam/Census/library/publications/2020/demo/p25-1144.pdf
[153] CIA World Factbook, Reference: Definitions and Notes, https://www.cia.gov/library/publications/the-world-factbook/docs/notesanddefs.html

Age Dependency Ratio:
Older Dependents on Working-Age Population

Source: U.S. Federal Reserve Bank of St. Louis [154]



This U.S. Federal Reserve Bank of St. Louis chart shows the U.S. Age Dependency Ratio (also called Elderly or Old-Age Dependency Ratios) of older dependents to the working-age population from 1960 through 2020. As indicated, the ratio dramatically increased from 18.8 when the first baby boomer accepted early retirement (at age 62) in 2011 to 25.6 by 2021, a 36% increase. This 36% increase equates to a "graying effect" of 7 months per year.

According to the U.S. Census Bureau, the old-age dependency ratio is forecast to increase to 35 by 2030 (the first decade in American history where the old-age dependency ratio exceeds the youth dependency ratio, i.e., more retirees than children) and 41 by 2060. [155]

The primary metric for the U.S. Bureau of Labor Statistics is the **Economic Dependency Ratio,** which measures the number of people in the total population (including the Armed Forces overseas and children) who are not working per hundred people in the labor force.

U.S. Economic Dependency Ratio

Source: U.S. Bureau of Labor Statistics[156]

Group	1999	2009	2019	2029	Change 1999-2029
Total population	93.6	97.2	100.2	104.1	**11%**
Under 16	44.2	42.1	39.7	38.8	**-12%**
16 to 64	28.8	34.7	35.0	34.2	**19%**
65 and older	21.7	21.3	26.4	32.0	**47%**

[154] U.S. Federal Reserve Bank of St. Louis, Age Dependency Ratio: Older Dependents to Working-Age Population for the United States (SPPOPDPNDOLUSA), 1 July 2021, https://fred.stlouisfed.org/series/SPPOPDPNDOLUSA

[155] U.S. Census Bureau, Demographic Turning Points for the United States: Population Projections for 2020 to 2060, Figure 2, issued March 2018, https://www.census.gov/content/dam/Census/library/publications/2018/demo/P25_1144.pdf

[156] U.S. Bureau of Labor Statistics, Economic dependency ratio, Table 3.5. Economic dependency ratio, 1999, 2009, 2019 and projected 2029 (Per hundred in the labor force), retrieved 21 July 2021, https://www.bls.gov/emp/tables/economic-dependency-ratio.htm

In 2019, for every 100 people in the labor force, 100.2 were not. Of those 100.2, about 38.8 were youth under 16 years of age, 34.2 were 16 to 64 years of age, and 32.0 were older than 65. For each of these year groups, the older age group had the smallest dependency ratios.

However, as highlighted in yellow, the older generation's growth rate (47%) far exceeds the younger generations (19% for the 16 to 64 group and a negative 12% for children under 16). However, this projection rate does not include the devastating impact of COVID-19 on American seniors.

Not only are people born today living longer, but older people are also living much longer. According to the U.S. Social Security Life Expectancy Calculator, an American woman reaching age 70 today can expect to live an additional 20.7 years to a ripe old age of 90.7. An American man will add 18.8 more years with an expected longevity of 88.8. [157] Per BLS data, nearly 1-in-5 Americans over 70-years are working compared to 1-in-10 in the early 1990s.

Contrary to popular opinion, older Americans are not only enjoying greater longevity but healthier and more active lives. Consequently, these factors offer great business and career opportunities in the direct-care industry (discussed in the next section) but for seniors themselves.

Generational Wealth Gap

Sources: U.S. Federal Reserve, Visual Capitalist[158]

Generation	Birth Years	Age	Population (Millions)	Wealth ($Trillions)	Wealth/ Person
Silent Generation	1945–1906	75+	23.0	$18.8	$817,391
Baby Boomers	1946–1964	56–74	71.2	$59.4	$834,270
		Total Seniors:	**94.2**	**$78.2**	
Generation X	1965–1980	40–55	65.0	$28.6	$440,000
Millennials	1981–1996	24–39	72.6	$5.0	$68,871
		Total Juniors:	**137.6**	**$33.6**	

The good news is that there is no shortage of wealth for startup businesses and career opportunities. However, almost half of all seniors have meager or no retirement savings, presenting other business and job prospects. The U.S. Government Accountability Office (GAO) states that 48% of baby boomers aged 55 and older have no retirement. Among those with some

[157] U.S. Social Security Administration, Life Expectancy Calculator, https://www.ssa.gov/planners/lifeexpectancy.html

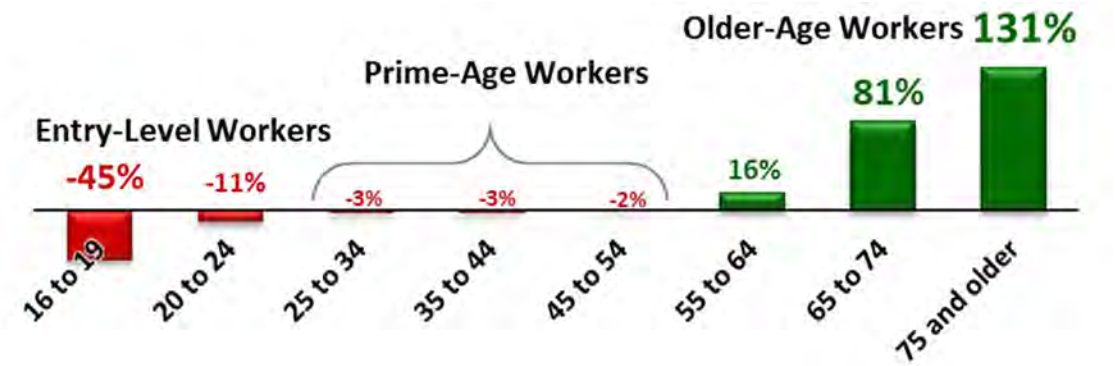
[158] Visual Capitalist, Charting The Growing Generational Wealth Gap, U.S. Federal Reserve data, 2 December 2020, https://www.visualcapitalist.com/charting-the-growing-generational-wealth-gap/

retirement savings, the median savings are about $104,000 for households aged 55 to 64, equivalent to an inflation-protected annuity of only $310. [159]

Consequently, many baby boomers will have to rely on social security, which will only provide necessities. Many seniors will have to remain or rejoin the workforce to make up the difference between satisfying basic needs and some indulgences. For these people, the Jobenomics Digital Academy & Business Generation will provide reskilling and upskilling programs to help seniors find full-time or part-time employment opportunities. As indicated below, older workers join U.S. labor at incredible rates.

Civilian Labor Force Participation Change By Age: 1999 To 2029

Source: U.S. Bureau of Labor Statistics[160]



This chart shows U.S. **civilian labor force participation** rates by age changes from 1999 to 2029 (projected). The red-colored bars indicate declining workforce participation and the green bars increasing participation. As shown, entry-level workers (ages 16 to 24) are waiting longer to join the labor force for multiple reasons discussed throughout this document. The percentage change of prime-age workers (25 to 54) is slowly deteriorating. Older-age workers (55+) stay longer, with folks aged 75+ staying the longest with an astounding increase of 131%.

As discussed in Chapter 1, Japan is the world's most elderly nation. For every 100 working-age adults (20-64), Japan has 48 people elderly (65 and over). The United States has 25 elderly for every 100 working-age adults. With an aging population, the United States should expect that seniors in the labor force will continue to increase, as has happened in Japan.

The Japanese also have one of the world's highest labor-force participation rates among older adults. 59% of men ages 65 to 69 are still working, compared to 38% in the United States. Due to the lack of skilled labor, Japanese corporations are relaxing retirement ages and finding innovative ways to use skilled oldtimers creatively. With 10.3 million vacant job positions, U.S. corporations will soon follow suit.

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[159] U.S. Government Accountability Office, Retirement Security, Most Households Approaching Retirement Have Low Savings, May 2015, updated March 2019, https://www.gao.gov/assets/680/670153.pdf and https://www.gao.gov/assets/gao-19-442r.pdf

[160] U.S. Bureau of Labor Statistics, Employment Projections, Table 3.3. Civilian labor force participation rates by age, sex, race, and ethnicity, 1999, 2009, 2019, and projected 2029 (in percent), retrieved 21 July 2021, https://www.bls.gov/emp/tables/civilian-labor-force-participation-rate.htm

U.S. corporations are already trying to reverse the notion that moving into a retirement home is abhorrent to most Americans. One of Jobenomic's major initiatives involves Live-Work-Retirement communities where seniors are actively engaged in working or supporting workers. Jobenomics also has a Veteran Owned Business Program where older vets help younger vets transition from the military to civilian life.

The Jobenomics Veteran Owned Business Program also works with veterans to maximize their VA-backed borrowing and building power. With a good credit rating, a veteran can qualify for a $1 million building loan for a multifamily home (e.g., fourplex or condominium). Thus, 100 veterans can collectively raise $100 million for a veteran-owned and operated Live-Work-Retirement community.

From a Jobenomics perspective, elder-care is a booming area for startup businesses and career opportunities. Most older Americans prefer to retire and age gracefully in their own home in a neighborhood replete with family members and friends. Well-off babyboomers can easily afford and choose elder-care support from seniors approximately their age. Numerous government programs are designed for elder-care in underserved and under-resourced communities for those not well-off.

As discussed in the following section, elder-care is one of the four focus areas in the Jobenomics Direct-Care Initiative.

Education Technology (EdTech)

As mentioned earlier in this document, the U.S. government accounts for payroll employment in eleven primary industry and government supersectors. The Trade, Transportation & Utilities industry supersector is the largest, with 27.1 million employees. The second-largest is the **Education** and Health Services supersector, with 23.5 million employees in two sectors: Educational Services and Healthcare and Social Assistance.

The previous section addressed Healthcare and Social Assistance. This segment will examine the U.S. educational system, including the Educational Services industry group, educators in State and Local Government positions, and the ascension of education technology.

According to the U.S. Bureau of Labor Statistics, the U.S. educational system consists of 13.3 million employees in the private sector (26%), state governments (18%, mainly with state universities), and local governments (56%, mainly with K-12 schools).

U.S. Education Employment Trends: June 2011 to June 2021

*Source: **U.S. Bureau of Labor Statistics**, Establishment Data, Table B-1, Employees on Nonfarm Payrolls*

	1-Jun-11	1-Jun-21	% of Total	Job Growth 2011-2021	% Average Growth/Yr
	Jobs (000s)				
Private Sector Education Services	3,228	3,486	26%	258	0.7%
State Government Education	2,372	2,352	18%	-20	-0.1%
Local Government Education	7,899	7,473	56%	-426	-0.4%
Total	13,499	13,311		-188	-0.1%
Color Key	*Lost Jobs*	*≤ GDP 2.3% Growth*			*Above GDP*

This table shows how U.S. education employment changed over the last decade. Generally speaking, the U.S. education system is not keeping pace with U.S. economic growth compared to GDP growth. Private sector jobs grew by a paltry 0.7%, and state and local government education downsized by almost 450,000 jobs.

Education and Health Services is the primary supersector responsible for developing strong minds and bodies needed for U.S. prosperity and global competitiveness. Education and Healthcare constitute nearly 20% of global GDP spending. The pandemic and the digital technology revolution have dramatically altered the course of this vitally important supersector.

Today's education and healthcare systems are under severe strain. Governments are the primary source of capital for these two sectors. As shown on the table, state and local governments struggle to balance budgets and must downsize personnel to make ends meet.

According to HolonIQ, a global impact market intelligence and innovation company, education is estimated to become a $10T global market by 2030. However, it is highly fragmented and **under-digitized**, impeding innovation on a worldwide scale. Since 2015, China has led the global investment in education technology (edtech). In 2020, China set a record $10 billion invested in

edtech and by the end of Q1 2021 had nearly invested twice the US, six times India, and ten times Europe since 2010. [161]

As discussed in Chapter Three, the silver lining during the darkness of the pandemic is the rise of Covid-prenuers. 2020 yielded six new edtech unicorns. A "unicorn" is a venture capital industry term to describe a privately held **startup** company with a value of over $1 billion. During the first six months of 2021, eleven new edtech unicorns exceeded the $1 billion thresholds. Seven of these eleven unicorns were American edtech companies specializing in online post-secondary skills training, online curriculums, upskilling, learning environment, career planning, alternative learning, and education resources.[162]

Before the pandemic, big data, machine learning, and artificial intelligence were the top educational technology trends in 2019. Over the last 18-months, students of all ages have adapted to learning via digital platforms using ever-changing and continually improving edtech technologies. COVID-19 quarantines, stay-at-home orders, social distancing, and other coronavirus restrictions drastically changed how the world teaches and learns. Consequently, digital learning (also known as distance learning, online education, and computer-based training) now dominates the educational landscape.

The Association for Educational Communications and Technology (AECT) defines edtech as "facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources." Educators prefer simpler descriptions like "transforming traditional teaching methods to digital form" or for the Ph.D.'s "integrating education technology to build better teaching/learning experiences and learning outcomes." Regardless of the definition, edtech benefits include new and innovative teaching systems (e.g., introducing multimedia, animation, local creative content, virtual reality, et al.), collaborative teaching and group sessions, and self-paced and remote learning.

From a Jobenomics perspective, the predominant post-pandemic edtech trends for the foreseeable future include gamification, O2O skills-based training, AI centaurs, chatbots, digital storytelling, influencer tutelage, immersive learning, learning analytics, emotive management, and digital credentialing and verification.

- **Gamification.** As discussed in this document's Online Entertainment & Video-Gaming section, gamification is the next big thing. According to eLearning Industry, COVID-19 has changed the way we teach and learn, and there is no reason for students not to be actively involved in classroom games. Students learn and practice during game activities. Gaming elements create a positive learning environment for learners.

[161] HolonIQ, About, https://www.holoniq.com/about-us/, EdTech vs HealthTech in 2020, 4 February 2021, https://www.holoniq.com/notes/edtech-vs-health-tech-2020/, and 2020 China EdTech 100. Where are they now?, 17 June 2021, https://www.holoniq.com/markets/edtech/2020-china-edtech-100-where-are-they-now/
[162] HolonIQ, Global EdTech Unicorns, 1 July 2021, https://www.holoniq.com/edtech-unicorns/

The adoption of gamification is most popular in the K-12 education sector. It's because kids are quickly engaged in gaming videos or getting higher scores in a game. However, it doesn't mean that higher education or corporate training doesn't need fun elements to improve the engagement level of learners.[163]

- **AI centaurs.** Automation is supplanting cognitive labor tasks by giving rise to "centaurs" (a combination of human operators, artificially intelligent [AI] agents, and AI-enhanced devices). AI agents and devices (that learn human behavior and communicate with humans) are in the cognitive workforce with fantastic speed. While AI needs human support to perform most tasks, AI agents and enhanced devices can perform enough complex tasks to reduce the need for full-time human labor, giving rise to collaborative human/AI centaurs.

- **Chatbots.** Chatbots, also known as web robots, chatterbots, or simply bots, are interactive, artificial intelligence-driven software applications that run automated tasks or simulate a conversation to deliver text-, voice- or video-based information to a user via a networked device. Siri, Echo, and Xiaoice are examples of chatbots.

  As depicted, Microsoft's wildly successful Xiaoice (pronounced Shao-ice, meaning Little Bing) is a Chinese social chatbot with a personality modeled on a teenage girl and a brilliantly accomplished skill set.

  According to Microsoft, Xiaoice has over 600 million users across 450 million hardware units, including phones and smart speakers. Xiaoice has conducted more than 10 billion conversations with humans about private matters via the Chinese social media platform Sina Weibo, which has 530 million monthly active users.

  Xiaoice serves as a virtual girlfriend and a sympathetic confidant to many lonely Chinese. She provides comfort and support and can crack jokes, send memes, flirt, and engage in counseling conversations. Xiaoice joined China's Dragon TV morning news as a weather "girl." Since Xiaoice possesses this level of artificial intelligence, she can undoubtedly add value to the classroom.

  The Bot Economy has unlimited potential if chatbots can mature to the point of being practical, friendly, and trustworthy. Millions of people would love to have a companion that would help them develop digital technical, emotional, and communication skills. Digital Skills-as-a-Service may be the next big thing.

- **Digital storytelling.** Storytelling is a lost art no longer taught in academic institutions. Storytelling creates relationships before imparting information. More than ever, today's remotely connected, transactional, multi-tasking, divided society needs good storytellers.

[163] eLearning Industry, Top Educational Technology Trends In 2020-2021, 19 November 2020, https://elearningindustry.com/top-educational-technology-trends-2020-2021

Digital storytelling is similar to video-assisted learning but with a personal twist. Videotaped stories can be live or recorded, in person or animated, inspirational or educational.

To paraphrase portions of The Art of Story Telling section, one must learn to tell stories digitally via video, images, and text to succeed in the digital economy. Videos on social media generate 12-times more shares than images and text. As a result, video content is in high demand by streaming services, social media, and online entertainment. Moreover, since the average American spends 13 hours daily on media (8 hours digital and 5 hours traditional media/TV), consumer demand for new and innovative video content is exploding.

Video content statistics are eye-opening. Livestreaming (transmitting or receiving live video in real-time) accounts for 80% of internet traffic. 40% of video viewers say that compelling content (a story) is the primary motivator for live online viewing. Companies that use video enjoy 41% more traffic from searches. In the digital business domain, storytelling makes buying and selling more personal.

Livestreaming is the most demanded by livestreaming platforms. Here is a list of the current leading livestreaming platforms: Restream (a multistreaming platform where you can go live on other media channels), Instagram Live, YouTube Live, YouTube Gaming, Facebook Live, Facebook Gaming, LinkedIn Live, Tik Tok Live, Twitter, Twitch, Clubhouse (audio), and Mixcloud (audio).

If storytelling has this enormous impact in the commercial world, it could do the same in the classroom. Like gamification, storytelling video creation can be an individual or group event. Students and teachers could post these videos on popular social media accounts (like Instagram, YouTube, TikTok, and Facebook Stories) to generate interest, build followings, and, as appropriate, generate revenue for the school.

- **Influencer tutelage.** As described in the Online Entertainment & Video Gaming section, companies pursue social media influencers to market their products and services. The EdTech marketplace is no different than other markets. Traditional educators might find the mixing of business and academia unsavory. On the other hand, college sports pay for a significant portion of the learning institution's salaries. Perhaps, this is why the Top-50 U.S. Universities and Colleges pay their football coaches over $3 million per year. In 2020, the University of Alabama paid football coach Nick Saban $9.1 million. [164]

  Per a 2019 Common Sense Media report on Media Use By Tweens and Teens, American tweens (8 to 12-year-olds) and teens average 4¾ hours and 7⅓ hours of entertainment screen media daily—not including screen time for homework or school. Thus, social media influencers are a new type of real-life endorser affecting behavior.

[164] NCAA, 2020 NCAAF Coaches Salaries, Updated 17 November 2020, https://sports.usatoday.com/ncaa/salaries/

School-age children spend hours watching their favorite vloggers (people who regularly post short videos to a personal website or social media account), playing games, unboxing toys, reviewing products, making jokes, or doing daily activities. These vlogging influencers can be motivated by leading EdTech companies and educationally-minded institutions to regularly post appropriate and entertaining educational content to build a large follower base.

- **Immersive learning.** The eLearning Industry, Virtual Reality (VR) and Augmented Reality (AR) have transformed class learning experiences and personal experiential learning. "Learning has become much more interactive than traditional methods. While VR provides a constructed reality, AR gives an enhanced view of a real image. Thus, they help explain complex concepts that plain images or hands-on experiments couldn't show students. For example, VR is pretty helpful when attending a medical training course. In detail, VR creates a chance for students to experience real-world surgeries in a low-risk environment."[165]

- **Learning analytics.** Learning analytics uses data analytics technology. According to the Society for Learning Analytics Research, "learning analytics is the measurement, collection, analysis, and reporting of data about learners and their contexts to understand and optimize learning and the environments in which it occurs." Learning analytics is both an academic field and a commercial marketplace. Learning Analytics sits at the convergence of Learning (e.g., educational research, learning, and assessment sciences, educational technology), Analytics (e.g., statistics, visualization, computer/data sciences, artificial intelligence), and Human-Centered Design (e.g., usability, participatory design, sociotechnical systems thinking). [166]

  From a Jobenomics perspective, learning analytics deals with learning institutions as well as with learners. In today's hybrid learning environment (i.e., classroom instruction, online instruction, and self-learning), learning analytics evaluates the efficiency and cost-effectiveness of different approaches to degree-based education and skills-based training. As a nation, the United States can no longer afford to graduate students that are not employable.

- **Emotive management and surveillance.** Emotive management and surveillance systems (also called emotion detection and recognition systems) analyze and manage emotions. Note: the term "emotive" should not be confused with emoticons (emotional icons) and emoji (ideograms or pictographs) used in gaming.

[165] Ibid
[166] Society for Learning Analytics Research (SoLAR), What is Learning Analytics, https://www.solaresearch.org/about/what-is-learning-analytics/

Thousands of U.S. schools already incorporate emotions analysis systems that analyze facial expressions. Per a recent financial report, the global emotion detection and recognition market size should grow from $19.5 billion in 2020 to $37.1 billion by 2026.[167]

Other emotive applications currently include customer satisfaction and sports applications. Security and workforce applications are now available for mass-scale surveillance, hyper-emotive sensitivity (mental illness), identification, and authentication purposes. Institutions will soon deploy hypervigilance systems to measure potentially destructive behaviors of individuals or groups that could cause harm or pose a threat.

The pandemic forced numerous public and private organizations to embrace new technologies, like emotive management and surveillance systems, for working remotely and maintaining social distancing. Digital technology advancements in face and voice recognition systems, artificial intelligence, machine learning, telehealth, and touchless identity verification systems significantly elevated this surveillance technology.

- **Digital credentialing and verification**. In the 20th Century, academic credentials (diplomas and certificates) were paper-based. Due to the digital technology revolution and fast-tracked by the global pandemics' stay-at-home restrictions, online education and training are now commonplace.

  The workplace has also changed. Task-oriented subcontract jobs are rapidly replacing full-time employment. Employers tend to be more interested in technical skills than degree-based foundational skills. As such, job seekers and independent contractors need electronic portfolios that offer a clear picture of their digital credentials. On the flip side, employers need to verify that these credentials are accurate and truthful.

  In addition to digitized diplomas, digital credentials include digital certificates and badges gained through achievement or skills-based training. Verifiable e-portfolios enable (1) institutions to bestow proof of skill, (2) individuals to substantiate their achievements, (3) employers to evaluate employability, and (4) clients to assess expertise. Trusted third-party certificate authorities can provide tamper-proof digital certificates with secure authentication and connection.

  To prosper in the digital economy, every individual and granting institution will need to implement a digital credentialing and verification strategy, which, in turn, will create numerous job, career, and business opportunities.

[167] MarketsandMarkets, Emotion Detection and Recognition Market, Emotion Detection and Recognition Market by Component (Software (Facial Expression Recognition, Speech & Voice Recognition), Services), Technology, Application Area, Vertical, Region - Global Forecast to 2026, https://www.marketsandmarkets.com/Market-Reports/emotion-detection-recognition-market-23376176.html

Compared to Healthtech, EdTech is still in its infancy, but it will snowball rapidly. According to Grandview Research, the global education technology market was $89.5 billion in 2020, increasing 323% to $377.9 billion by 2028. Ten out of the dozen prominent players worldwide edtech market are U.S. companies. Per Grandview Research, the most prominent players include BYJU'S (India), Blackboard (USA), Chegg (USA). Coursera (USA), Edutech Inc. (USA), edX Inc. (USA), Google LLC (USA), Instructure (USA), Microsoft (USA), Udacity (USA), and upGrad Education Pvt. Ltd.(India).[168]

As indicated in the above paragraph, the USA is coming on extremely strong in the edtech marketplace. This explosion of digital technologies in the educational domain means numerous career and startup business opportunities for teachers, professors, and other related disciples. The Jobenomics Digital Academy & Business Generator will analyze and exploit these opportunities.

[168] Grandview Research, Education Technology Market Size, Share & Trends Analysis Report By Sector (Preschool, K-12, Higher Education), By End User (Business, Consumer), By Type (Hardware, Software), By Region, And Segment Forecasts, 2021 – 2028, April 2021, https://www.grandviewresearch.com/industry-analysis/education-technology-market

Self Teaching Technology (SelfTech)

SelfTech is a Jobenomics coined term that could be the educational third rail in the post-pandemic era. This rail can be as prominent as the traditional degree-based educational rail and certification-based training rail.

Throughout history, technological revolutions transformed societies. The Digital Technology Revolution (DTR) will be more transformative than the former tech revolutions. Due to a perfect storm of technologies that can emulate human form, attributes, and intelligence, the DTR is revolutionizing our educational system in ways never imagined.

Technology Revolutions

The Agriculture Revolution (AR) involved inventions and innovations that increased food production. The Industrial Revolution (IR) transformed America from an agricultural-based society to an industrial-based nation. The post-WWII Military Technology Revolution (MTR) underpinned the creation of the world's largest economic superpower. The 1980s Information Technology Revolution (ITR) ushered in an information age of prosperity and international commerce. Today, the Digital Technology Revolution (DTR) is reshaping the global economy. Like the AR, IR, MTR, and ITR, the DTR could create millions of startup U.S. businesses, tens of millions of new American jobs, and countless economic,.social, and educational benefits.

The DTR is not ITR 2.0. While both are revolutionary, the DTR is significantly more disruptive than its earlier and benign ITR cousin. ITR tools assist and enhance humanity's productivity. DTR's artificially intelligent agents and bots augment and replace human endeavor.

Like most institutions rooted in the past, the U.S. education system still clings to an Industrial Age premise that getting a degree gets you a job, and getting an advanced degree gets you a better job. Today, many policymakers believe that everyone needs to go to college to succeed. The pandemic's prolonged closure of pre-primary, primary, secondary, and tertiary educational

institutions proved that digital education technology is a viable alternative to traditional classroom instruction.

As stated throughout this document, Jobenomics asserts that skills-based training (the second "rail") is a viable and complementary alternative to degree-based education (the first "rail"). Certifiable skills-based training is a quicker path to a good-paying job than getting a degree that takes years to earn. Both the educational rail and training rail imply a teacher-to-student relationship, whether in the classroom or online.

The Jobenomics so-called "third rail" involves self-instruction, self-teaching, experiential education, or the school of hard knocks. Self-taught college dropouts created the Information Technology Revolution (ITR), who felt that they could learn faster by themselves than was offered to them at premier universities like Harvard, MIT, and UCLA.

The list of ITR heavyweight CEO dropouts is eye-opening: Bill Gates (dropped out of Harvard to start Microsoft), Mark Zuckerberg (Harvard, Facebook), Steve Jobs (Reed College, Apple), Matt Mullenweg (University of Houston, WordPress), James Park (Harvard, Fitbit), Jack Dorsey (NYU, Twitter), Larry Ellison (USC, Oracle), Michael Dell (University of Texas, Dell Computers), Jan Koum (San Jose State, WhatsApp), Travis Kalanick (UCLA, Uber), Arash Ferdowsi (MIT, Dropbox), Sean Parker (no college, Napster and former president of Facebook), and last but not least David Karp (no high school or college degree, Tumblr).

Other self-taught notables include Abe Lincoln (president), Anne Beiler (Auntie Anne's Pretzels), Adams (photographer), Barbara Lynch (chef, restaurant chain), Ben Franklin (inventor, diplomat), Charles Culpeper (Coca Cola), Colonel Sanders, (Kentucky Fried Chicken), Dave Thomas (Wendy's), Frank Lloyd Wright (architect), Wayne Huizenga (Blockbuster), Joyce Hall (Hallmark), Larry Ellison (Oracle), Mary Kay Ash (Mary Kay Inc.), Rachael Ray (Food Network), Ray Kroc (McDonald's), Richard DeVos (Amway), Rob Kalin (Etsy), Rush Limbaugh (radio talk show host), Shawn Fanning (Napster), and Walt Disney (Disney).

The Jobenomics Digital Academy's skills-based training program will combine online and classroom instructors to earn entry-level certificates. As part of the Jobenomics lifelong-applied learning program, the primary learning method will be self-initiated and self-taught, with Digital Academy staff providing guidance, mentoring, and sherpa services.

The Digital Academy & Business Generator will also offer an Entrepreneur Club for wannabe entrepreneurs and business owners, replete with food services and meeting rooms. According to the Kauffman Foundation, the leading U.S. institution on entrepreneurialism, Entrepreneurs thrive best in places with communities or 'ecosystems' to draw upon, and communities perform best when they breed new entrepreneurial businesses prolifically.

Chapter 6. Jobenomics Sprung Alliance Facilities

The temptation for most communities is to save money by using existing educational facilities or repurposing vacant buildings. Due to the massive economic and labor force impact of the emerging digital technology revolution and digital economy, Jobenomics strongly recommends that communities need a modern, state-of-the-art facility to showcase their Digital Academy & Business Generator.

Utilizing vacant or renovated buildings will denigrate the importance and urgency of enabling digital entrepreneurialism and exploiting the rapidly growing digital economy. A traditional or laissez-faire approach to digitally upskilling or reskilling a workforce will not do.

As a result of this philosophy, a Jobenomics-Sprung Structures team developed a Jobenomics Digital Academy & Business Generator model for interested communities. Sprung Structures has designed, manufactured, and implemented thousands of community, training, office, and conference centers worldwide.

This Digital Academy & Business Generator model consists of a 19,500 square foot facility equipped with state-of-the-art digital infrastructure and training, coworking, office, and conference spaces. This facility can be operational within eight months at $3,335,500.

Additionally, Jobenomics has multiple ways (sponsorships, grants, contracted training programs, and event/rental/conference fees) to pay for this facility's notional $515,000 per year building and operational costs.

Facility Considerations

Today, there are Sprung structures in virtually every market sector worldwide. While many government and corporate officials chose Sprung structures for their functionality, others selected Sprung for their unique edifice's futuristic and eye-popping impact.

In 2020, the world's two richest men used Sprung Structures for their flagship efforts.

Jeff Bezos' state-of-the-art, 225,000 square foot Blue Origin (a private company that manufactures reusable space-launch vehicles and rocket engines) Headquarters was operational in 11-months. Bezos' design objective was straightforward, build a high-tech, sustainable facility to **inspire** and support 1,500 headquarters and R&D team members.

Elon Musk, America's leading serial entrepreneur, rarely misses an opportunity to make a statement. His new state-of-the-art 140,000 square foot Tesla assembly line was ready in only 3-weeks.

Sprung Structures are not only an attraction but a destination. An ultra-modern Digital Academy & Business Generator will attract blue ribbon entrepreneurs (like Bezos and Musk), corporate sponsors, and investors to underwrite the certified skills-based training programs and mass-production of startup firms.

Why Sprung Structures

The Jobenomics-Sprung alliance is collectively designing Jobenomics Digital Academy & Business Generator facilities. Sprung (https://www.sprung.com/) specializes in "immediate building solutions" for industrial and non-industrial applications that can be operational within weeks of contract award.

Sprung has been in business for over 120 years and has designed and patented a fabric membrane technology that outperforms other building alternatives and delivers rapid construction capabilities, total design flexibility, exceptional durability and longevity, and lower overall project costs. Today, 13,000 Sprung Structures are in 110 countries. Headquartered in Alberta, Canada, Sprung has manufacturing and distribution centers in the United States (Salt Lake City) and the Middle East and offices worldwide.

There is no other tensioned membrane structure like a Sprung structure in the world. Consequently, Jobenomics selected Sprung for the following reasons:

- **Rapid Construction.** Sprung has over two million square feet of inventory that assures fast delivery and timely project completion. Sprung can deliver most structures within three weeks of order. The Sprung team can complete a non-insulated facility at up to 2,000 sq. ft. per day and an insulated system as quickly as

1,000 sq. ft. per day. Sprung offers both purchase and lease options.

- **Performance & Durability.** These structures are north of the Arctic Circle and the hottest areas in the Middle East. The U.S. armed forces use various Sprung systems (aircraft hangers, warehouses, housing, office, community, and detention centers) in combat zones. Miami-Dade County recently certified Sprung structures as Level-5 Hurricane capable. The fiberglass insulation system in Sprung fabric structures outperforms other types of construction, with less environmental impact and lower operating costs.

- **Design Flexibility.** The modular design of Sprung's relocatable structures allows clients to easily add or remove modules to increase or decrease the available square footage to meet operational needs. Non-corroding aluminum substructure and ultra-durable, high-performance architectural membrane will last decades. Sprung recently relocated an 8-acre greenhouse from Alberta to Newfoundland—a distance of 2,350 miles. In addition to high ceilings, daylight panels, and stylish windows and doors, optional glazing walls (glass curtain walls) allow more natural light to penetrate than most relocatable buildings. Graphic foils (shown) and logos are easy to apply to the Sprung tension membrane.

- **Lower Overall Costs.** Rust-free aluminum substructure provides an almost indefinite lifespan. The fiberglass insulation system in Sprung fabric structures outperforms other types of construction, resulting in less environmental impact and lower operating costs. The fiberglass insulation system in Sprung fabric structures outperforms other forms of construction, resulting in less environmental impact and lower operating costs. Tedlar and Kynar-coated high-performance architectural fabric membranes are long-lasting with an attractive selection of finishes—eliminating the need to refinish the interior or exterior walls.

- **Adaptability & Reusability.** Sprung designed its structures to be adapted and reused (photos show the same building in three locations). They may be disassembled, reconfigured, or expanded and relocated for another application. No demolition is required, and no waste goes to the landfill. A Sprung structure dramatically reduces construction timelines as a fast, reliable alternative to conventional construction. Each system arrives at a client's site prefabricated, eliminating substantial waste associated with traditional construction.

This collage shows various high-impact design concepts under consideration by Jobenomics for the Digital Academy & Business Generator program.

19,500 Square Foot Digital Academy & Business Generator Example

Potential Coworking Configurations & Office Space

Conference Center & Food Service Layout

Preliminary Jobenomics Digital Academy & Business Generator Cost Analysis

BUILDING INFORMATION				
Size (ft^2):	19,500			
Dimensions (ft):	100 x 195			
Material:	Opaque, Insulated			
Intended Use:	Office/mixed-use environment			
Delivery Schedule:	3 -4 Weeks			
Structure Installation Schedule:	8 Weeks			Assume a 12-person installation crew
Equipment Installation Schedule:	8 Weeks			Depending on the actual building interior and furnishings
PRICING - EQUIPMENT AND MATERIALS	**Quantity**	**Unit Cost**	**Sub Total**	**Notes**
Structure				
Base Building:	1	$810,000	$810,000	
Delivery:	1	$25,000	$25,000	
Interior				
Budgetary Allowance for Interior Design and Furnishings:	1	$1,950,000	$1,950,000	Includes foundation, MEP (mechanical, electrical, and plumbing)., interior buildout, etc. Does not include site works or parking.
PRICING - SERVICES				
Project Design				
Architectural, Engineering, and Project Management Services:	1	$250,000	$250,000	Subject to local rates and final design parameters
CONTINGENCY				
	1	$303,500	$303,500	10%
TOTAL BUDGET			**$3,338,500**	

Preliminary Jobenomics Digital Academy & Business Generator ROI Analysis

Yearly principal and interest payments on a $3,338,500, 30-year, 4.5% commercial loan are approximately $185,000. Minimum staffing of three full-time people (grants and contracted services will fund additional personnel wages) at an average salary of $60,000 adds $180,000. Miscellaneous expenses and utilities may add another $150,000. Thus, the Jobenomics team needs to raise at least **$515,000** per year to cover the Center's operational costs.

Potential revenue producers include the following activities:

- **Sponsorships**
- **Federal, state, and local grant programs**
- **Digital Academy**
    - Skills Based Training and Certification Programs
        - STEAM
        - E-Commerce
        - E-Sports training
        - Bridging Cyber
    - Workforce training
    - After school academy
- **Direct Care Center**
    - CARES Act
    - COVID & Infectious Disease Testing/Inoculation Center (Aleph Diagnostics)
- **Entrepreneur Club** (based on Club-E Atlanta)
    - Startup business incorporation
    - Starbucks, Sandwich & Coffee Shop
    - Startup SBA loans and private sector financing
- **Community-Based Business Generator**
- **Counseling Service Offices**
    - Homelessness
    - Veterans
- **Conference Center**
    - Kinko/Fed Ex Center
    - Business conferences
- **Coworking Offices and Rentals**
    - New businesses
    - Suburban businesses

This list will be fleshed out and validated during the initial 6-month Planning, Land Acquisition, and Permitting Phase 0. The Digital Academy & Business Generator's success depends on developing community support and funding. Corporations and individuals alike should be willing donors for many reasons, including revitalizing under-resourced communities, providing business and career opportunities for underserved and at-risk youth, and providing essential services to people in need.

Notional Corporate & Individual Sponsorship Categories

Sponsorships	Level	Minimum	Year 1	Year 2	Year 3
Corporate	Platinum	$50,000	$0	$50,000	$100,000
	Gold	$25,000	$25,000	$50,000	$100,000
	Silver	$10,000	$20,000	$40,000	$80,000
	Honorary	$5,000	$15,000	$40,000	$75,000
	Sponsor	$1,000	$5,000	$15,000	$30,000
Individual	Elite	$10,000	$10,000	$50,000	$100,000
	Honorary	$5,000	$15,000	$40,000	$75,000
	Sponsor	$500	$4,000	$10,000	$25,000
			$94,000	**$295,000**	**$585,000**

This table shows a notional donor program that, if successful, could cover the Center's operational cost in the third year. The Jobenomics Founder, Chuck Vollmer, has relationships with leading corporations with already pledged support for scalable humanitarian programs like this program.

Major international corporations (e.g., Coca-Cola, Walmart, Nike, etc.), foundations (e.g., Bill & Melinda Gates, Ford, Bloomberg, Kellogg, Packard, Mellon, etc.) support minority, women, and veterans' programs, which are in vogue. Major local area employers would not only be interested in being a sponsor but recipients of our Digital Academy graduates. Given a professional marketing campaign, corporate and individual donors will want to be associated with our effort.

Club-E (Club Entrepreneur) Atlanta


This picture shows the entrepreneur club (Club-E, https://www.clubeatlanta.com/) that Jobenomics helped establish in Atlanta in 2012. Club-E is a global network that connects entrepreneurs to the financial and supportive resources they need to grow their businesses. Club-E members benefit from the connections with other entrepreneurs at local chapter meetings, global online networking, and educational how-to videos and lectures from local success stories. Club-E is **our working model** for the Digital Academy & Office Center.

The following table shows Club-E usage, revenue, expenses, and net income figures for the third year of operation. While Jobenomics does not have the recent data for 2020, these are statistics that we have for 2015—the projections for the third year of operation (detailed spreadsheets are available). The Founder and Principal of Club-E Atlanta, Bob Johnson, is a Jobenomics Senior

Advisor. Bob will consult and provide lessons learned for the Digital Academy & Business Generator.

CLUB -E Usage	
# Of Virtual Members	175
# of Basic Members-New	10
Cumulative Basic Members	350
# of Office Rentals	4
External Events- Meeting Rms	314
Percentage of Capacity-1,120	28%
Sponsored Events-Seminar Room	20

Revenue	
Member Revenue	$352,230
Rental - College Park EDC	$6,000
Club E Café	$19,200
Club E Copy Center	$9,000
Club E - Membership Pkgs	$352,230
Office Tenants- Club E	$14,400
External events- meeting rooms	$52,560
External sponsored events	$30,000
Other Revenue-Benefits/SBA	$117,300
Total Income	**$600,690**

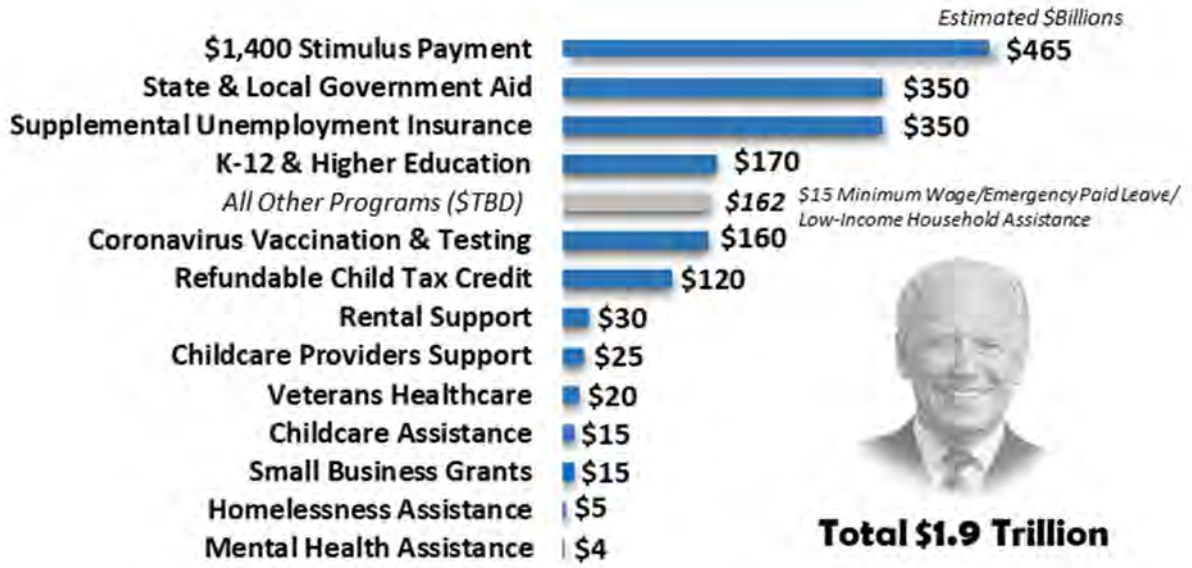
Expenses	
Phone	$18,000
Utilities	$8,400
Reservation System	$6,000
Mortgage	$16,164
2nd Mortgage	$30,000
Escrow Payments (RE Taxes)	$4,800
Marketing	$31,965
Copier	$1,500
Cleaning	$3,000
Insurance	$6,000
Office supplies	$3,000
Club Manager	$42,000
Receptionist	$48,000
Admin Assistant	$64,800
IT Person-Contract	$42,000
Fringe Benefits/Taxes	$16,920
Café Consumables	$3,000
Other	$7,800
Total expenses	**$353,349**

Net Income	**$247,341**

Club-E's primary source of revenue is from its membership. Additional revenue sources came from office rentals and tenants, Club-E Café, copy center, membership packages, sponsored events, and SBA grants. At only 28% capacity, Club-E generated a projected net income of $247,341 in the third year (note: the first year had a loss of $41K, and year 2 had a profit of $112K). The Digital Academy's utilization should be significantly higher than 28% due to the high-profile nature of our overall program and celebrity endorsement—Club-E did not have—and having Bob Johnson's expertise and lessons learned.

The Jobenomics Direct-Care Initiative is the type of program that fulfills many of the American Rescue Plan categories, including K-12 & Higher Education Coronavirus Testing, Childcare, Veterans Healthcare, Small Business Grant, Homelessness, and Mental Assistance. The Jobenomics Direct-Care Initiative involves on-demand and remote services accomplished by small and self-employed businesses via a community-based call and information center located in our Digital Academy office complex. Direct-care services include healthcare, social assistance, behavioral care, elder care, and child care.

President Biden's $1.9 Trillion "American Rescue Plan"



Federal, state, and local grant programs are also significant and viable funding sources. Grants.gov has a database of 1,000+ grant programs across all 26-federal grant-making agencies, including the Department of Commerce and the U.S. Small Business Administration.

The U.S. Department of Commerce's Economic Development Administration provides grants, resources, and technical assistance to communities to support economic growth and encourage entrepreneurship and innovation. The U.S. Department of Commerce, Minority Business Development Agency (MBDA) is the only federal agency solely dedicated to the growth and global competitiveness of minority business enterprises. MBDA is seeking 5-year grants to open and operate new MBDA Business Centers to provide technical and business development services to minority business enterprises. The Jobenomics Digital Academy & Business Generator would be ideal for an MBDA Business Center.

The U.S. Department of Veterans Affairs (VA) Supportive Services for Veteran Families (SSVF) grant program leverages flexible spending for rent and financial assistance, case management, outreach, and benefits, including health care, legal support, and transportation. On 14 September 2020, the VA awarded $1.3 million in grants to 11 regional homelessness nonprofit organizations (an average of $118,000 each) to bolster suicide prevention services for veterans experiencing homelessness.

Housing First, Inc., a Mobile, Alabama area agency (the only Alabama agency recently awarded SSVF), was awarded $2,456,101 in SSVF Funding for FY2021. Housing First also pocketed eight HUD grants in 2019 (2020 data not readily available), totaling $3,634,665 for Continuum of Care (CoC) as listed.

HUD Exchange Continuum Of Care Grants (2019)

AL-501 **Mobile City/Baldwin County, AL**

Housing First, Inc.

Community Housing Program	$1,015,600
Homeless Management Information System	$173,723
Community Connections Network	$752,973
Permanent Housing Chronic Homeless	$460,809
Disabled Homeless Program Permanent Housing	$566,077
Rapid Re-Housing for Families and Youth Expansion	$369,086
Returning Neighbors Housing Program	$185,410
CoC Planning Activities 2019	$110,987
	$3,634,665

Montgomery, the Alabama State Capital, and Montgomery County received only about a quarter (27%) of the amount of CoC money ($993,713) awarded to similarly-sized Mobile and Baldwin County. Since the Jobenomics Digital Academy & Business Generator will also service the homeless, returning, and disabled veterans, we should compete against Housing First.

HUD's Community Development Block Grant (CDBG) Program provides grants to states and localities to provide decent housing and a suitable living environment and expand economic opportunities, principally for low- and moderate-income persons. Here is a list of CDBG grants to Montgomery in 2020.

Community Development Block Grant Program (2020)

AL-504 **Montgomery City/Montgomery County, AL**

CDBG	CV1	$994,449
CDBG		$1,690,472
CDBG	CV3	$1,166,553
		$3,851,474

Additionally, the CDBG Economic Development Fund (**Workforce Development**) provides **$200,000+** grants to local organizations, like our Digital Academy, to create or retain 15 or more jobs.

HUD's Emergency Shelter Grants Program (ESG) provides grants to states and localities to rehabilitate and operate emergency shelters and transitional shelters, provide essential social services, and prevent homelessness. Here is a list of CDBG grants to Montgomery in 2020.

Emergency Shelter Grants Program (2020)

AL-504 **Montgomery City/Montgomery County, AL**

ESG	CV1	$504,662
ESG		$146,352
		$651,014

President Biden's cabinet and the inner circle are the most diversity-conscious individuals in Executive Branch history. They are also deeply committed to progressive programs like Black Lives Matter, income inequality, and minority business development. The Digital Academy & Business Generator has numerous programs that would meet the criterion in the Biden Administration's new $1.9 trillion "American Rescue Plan."

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Chuck Vollmer is the Founder and President of the Jobenomics National Grassroots movement. Chuck is an economic, community, business, and workforce development expert recognized by government officials, community leaders, and national media (CNN, Fox, CBN, etc.). A former Fortune 50 corporate executive and highly decorated combat fighter pilot, corporate executive, and serial business developer who started hundreds of businesses, he now specializes in mass-producing startup businesses and jobs in underserved communities.

About Jobenomics

Jobenomics deals with the process of creating and mass-producing small businesses and sustainable careers. Jobenomics' principal focus is on citizens in underserved and under-resourced communities, emphasizing minorities, women, youth, veterans, and other hopefuls who want to develop a skill, career, and start a business. The Jobenomics National Grassroots Movement has reached 30 million people via media, website, blog, and lectures. In 2018, Jobenomics America TV began airing multiple public access channels across the United States. In 2019, Jobenomics' website was averaging 33,000-page views per month. Most viewers spent a half hour or more online, not counting time spent reviewing hundreds of thousands of downloads of Jobenomics fourteen e-books and special reports. Today, Jobenomics has garnished widespread recognition for its economic, urban renewal, small business, and workforce development efforts. For more information, see Jobenomics.com.