

Charting Disruption

Insights into the World's Most Powerful Disruptive Themes

2Q 2020



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Cloud Computing: Surge In 'Work From Home' Supported by Cloud Infrastructure

Amid social-distancing efforts put in place to stymy the spread of COVID-19, more companies and individuals rely on cloud-based infrastructure and software, likely benefiting cloud computing companies in the infrastructure as a service (laaS), and software as a service (SaaS) spaces.

SEARCH ENGINE TRENDS POINT TO HEIGHTENED INTEREST IN REMOTE WORK ENVIRONMENTS



Note: Search relevance rated on scale of 0 – 100 based on topic's proportion to all searches on all topics. Source: Google, Global X ETFs, March, 2020.

AT-HOME BROADBAND DATA CONSUMPTION SOARS IN U.S. AS COMPANIES MOVE TO VIRTUAL WORK ENVIRONMENTS



Source: Telecompetitor, OpenVault, Global X ETFs, 2020.

GLOBAL X

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Cybersecurity: New Cyber Threats Target New Work Setups

Increased reliance on virtual infrastructure means new opportunities for cybercriminals to target businesses and individuals. Cyberattacks surged in early March, but have since leveled off as more defenses are employed, like the use of virtual private networks (VPNs) and Remote Desktop Protocols (RDPs).



CYBERATTACKS MOUNT AS COVID-19 PANDEMIC CONTINUES



VPN USE SOARS AS COMPANIES WORK REMOTELY, SEEK TO PROTECT DATA

Source: Global X ETFs, ExpressVPN, 2020.



GLOBAL X

Video Games and Esports: Filling The Void

As people spend more time indoors and in isolation, video games and esports serve as an outlet for socialization and entertainment. Since the introduction of widespread stay-at-home efforts, interest in video games and esports has surged. While the spike is recent, we expect new habits to be formed and new users to permanently join a rapidly expanding audience well beyond COVID-19's impact.

STREAMING TO PASS THE TIME: TWITCH VIEWERSHIP TREND SHOWS EXPANDING AUDIENCE



AMID SOCIAL DISTANCING, INDIVIDUALS ACROSS AGE AND WEALTH DEMOGRAPHICS EXPECT TO PLAY MORE VIDEO GAMES



Note: Survey conducted by Global Web Index in March 2020; ~13,000 people in 13 countries Source: Global X ETFs, Global Web Index, 2020.



GLOBAL X

by Mirae Asse

Video Games and Esports: The Next Console Super Cycle

Historically, the release of a new console generates positive spillover effects, such as increased game and accessory purchases. In 2020, we expect to see two new major consoles released, the PlayStation 5 & Xbox Series X, which could accelerate industry revenues.



E-commerce: Still Open for Business

COVID-19 has wreaked havoc on retail businesses, with many physical stores shutting their doors due to social distancing efforts. Many ecommerce companies, however, expect to see increased revenues as consumers shift purchasing habits online, particularly for essential goods.

MAJORITY OF E-COMMERCE RETAILERS EXPECTED POSITIVE TO NEUTRAL IMPACT, PRE-COVID-19

SURVEY: EXPECTED IMPACT OF COVID-19 ON E-COMMERCE BUSINESSES



PURE E-COMMERCE REVENUES SUFFER, WHILE ESSENTIALS AND OMNICHANNEL WEATHER THE STORM



Source: Global X ETFs, WITHIN, 2020.



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Social Media: Monetizing Time Spent on Networks

With user growth slowing, social media providers are focusing on further monetizing the time users spend on their platforms, primarily through targeted advertising. Data shows users expect to spend more time on social media during the COVID-19 pandemic. Longer term, however, social media platforms are looking towards new revenue sources, like integrating e-commerce into their platforms, for further monetization.

SOCIAL MEDIA COMPANIES SEEK TO MONETIZE TIME SPENT ON PLATFORMS





MEDIA CONSUMPTION BREAKDOWN

*Estimates.

**As of April 2019. % of Social Media Spending includes Online Video category. Average Media Time Spent based on US estimates. Ages 18+; time spent with each medium includes all time spent with that medium, regardless of multitasking; for example, 1 hour of multitasking on TV while listening to radio is counted as 1 hour for TV and 1 hour for radio.

Source: Global X ETFs, Electronic Sourcing Online, 2020.

INTERNET USERS EXPECT TO USE SOCIAL MEDIA MORE DURING COVID-19 PANDEMIC



Source: Global X ETFs, Electronic Sourcing Online, 2020.



Cannabis: An Essential Business

Cannabis sales increased in mid-March as consumers stocked up ahead of stay-at-home orders. Edible cannabis product sales outpaced that of pre-rolled flower as consumers evaluated the respiratory risks presented by smoking in light of COVID-19. The pandemic, and its strain on local and state budgets, could provide further tailwinds for cannabis legalization efforts as municipalities look for new sources of tax revenue.

ADULT-USE CANNABIS SALES SURGED IN MID-MARCH DUE TO STOCKPILING



EDIBLE CANNABIS PRODUCTS SEE SALES BUMP AMID COVID-19 DRIVEN RESPIRATORY CONCERNS





Source: Global X ETFs, Headset, 2020.

Source: Headset, Global X ETFs, 2020.

U.S. Infrastructure Development: Recession May Push Government To Fund Construction Bill

The U.S. is quickly plummeting into a recession, with surging unemployment and stalling consumption. Following the Great Recession, infrastructure investment was a key tenet of economic stimulus and job creation. Given broad efforts to stimulate the economy and the poor state of the country's infrastructure, we expect government stimulus efforts to focus on this critical area.

U.S. INFRASTRUCTURE SPENDING SHRINKS RELATIVE TO GDP GROWTH



Note: GDP data from St. Louis Fed, construction spend from US Census, both seasonally adjusted annual rates Source: St. Louis Fed, US Census, Global X ETFs, 2020.

INFRASTRUCTURE BUILD-OUT COULD OFFER EMPLOYMENT TO NEWLY UNEMPLOYED WORKERS IN CONSTRUCTION AND OTHER SECTORS



Note: Unemployment numbers are not seasonally adjusted Source: US Bureau of Labor Statistics, Global X ETFs, 2020.



Fintech: Emerging Markets Lead, Will U.S. Millennials Follow?

Fintech's adoption in certain emerging markets (EM) has outpaced the developed markets, as it provides previously unserved populations with access to financial services and modernized banking services. As millennials become the main consumption group in the U.S., however, we expect fintech adoption to rapidly increase.

EM ADOPTION OF FINTECH LIKE MOBILE PAYMENTS HISTORICALLY OUTPACED DM







Source: Bain, Research Now, Global X ETFs, 2018.

Source: eMarketer, Trading Economics, Global X ETFs, 2020.



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Robotics & AI: Automation May Benefit From Reshoring Efforts

Recent disruptive macro events like trade conflicts and global health emergencies challenge the multi-decade-long trends of globalization and offshoring manufacturing. To gain more supply chain and regulatory certainty, many firms are now looking to re-shore their supply chains; a trend that is likely to propel robotics as firms look to automate tasks to reduce costs.

ROBOTIC AND AUTOMATED MANUFACTURING COSTS DECREASE AS LABOR COSTS RISE



Source: McKinsey & Co, International Robot Federation, Economist Intelligence, Global X ETFs, 2020.

U.S. LABOR FORCE COMPOSITION SHIFTS AS FIRMS FURTHER RELY ON ROBOTICS MANUFACTURING

MONTHLY U.S. MANUFACTURING EMPLOYEES



Source: US Bureau of Labor Statistics, Global X ETFs, 2020.



More Research On Thematic Investing

See our latest research on thematic investing for more information on these powerful trends, or visit globalxetfs.com/research

- An Infrastructure Plan for the 21st Century
- Lithium, Explained
- A Decade of Change: How Tech Evolved in the 2010s and What's In Store for the 2020s
- <u>Video Game Industry Hits Reset in 2020</u>
- Theme Lab: A Look Inside An Amazon Fulfillment Center
- How Supply Chain Disruptions Are Accelerating Robotics Adoption
- Mapping the Cloud: A Look at the Segments Driving Growth
- Thematic Growth Valuation Analysis
- How Cybersecurity Will Accelerate IoT's Growth

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A WHITEPAPER ON THEMATIC INVESTING

Jey Jacobs, CFA Director of Research GILOBAL X Beyond Ordinary ETFs'

Global X Thematic Growth ETF Suite

Global X has 17 ETFs designed to target companies that may benefit from disruptive structural changes in technology and innovation, people and demographics, and the physical environment, in addition to 1 multi-theme, single-ticker ETF¹. To see individual ETF holdings across the Global X Thematic Growth Suite, click the below links:

Disruptive Technology
Global X Social Media ETF (SOCL)
Global X Lithium & Battery Tech ETF (LIT)
Global X FinTech ETF (FINX)
Global X Internet of Things ETF (SNSR)
Global X Robotics & Artificial Intelligence ETF (BOTZ)
Global X Autonomous & Electric Vehicles ETF (DRIV)
Global X Future Analytics Tech ETF (AIQ)
Global X Cloud Computing ETF (CLOU)
Global X Genomics & Biotechnology ETF (GNOM)
Global X Video Games & Esports ETF (HERO)
Global X Cybersecurity ETF (BUG) ¹ As of 03/31/2020

People & Demographics

Global X Millennials Thematic ETF (MILN)

Global X Longevity Thematic ETF (LNGR)

Global X Health & Wellness Thematic ETF (BFIT)

Global X E-commerce ETF (EBIZ)

Global X Cannabis ETF (POTX)

Physical Environment

Global X U.S. Infrastructure Development ETF (PAVE)

Multi-Theme

Global X Thematic Growth ETF (GXTG)

Disclosures

Investing involves risk, including the possible loss of principal. There is no guarantee the strategies discussed will be successful. International investments may involve risk of capital loss from unfavorable fluctuation in currency values, from differences in generally accepted accounting principles or from economic or political instability in other nations. Emerging markets involve heightened risks related to the same factors as well as increased volatility and lower trading volume. Narrowly focused investments may be subject to higher volatility. The investable universe for thematic ETFs may be limited. The funds are non-diversified.

Video Game and Esports and Cybersecurity Companies are subject to risks associated with additional regulatory oversight with regard to privacy/cybersecurity concerns, shifting consumer preferences, and potential licensing challenges. Declining or fluctuating subscription renewal rates for products/services or the loss or impairment of intellectual property rights could adversely affect profits. Thematic companies may have limited product lines, markets, financial resources or personnel. They typically engage in significant amounts of spending on research and development, capital expenditures and mergers and acquisitions.

Investments in infrastructure-related companies have greater exposure to the potential adverse economic, regulatory, political and other changes affecting such entities. The risks related to investing in cloud computing companies include disruption in service caused by hardware or software failure, interruptions or delays in service by third-party data center hosting facilities and maintenance providers, security breaches involving certain private, sensitive, proprietary and confidential information managed and transmitted by cloud computing companies, and privacy concerns and laws, evolving Internet regulation and other foreign or domestic regulations that may limit or otherwise affect the operations of such companies.

Cannabis companies are subject to various laws and regulations that may differ at the state/local, federal and international level. These laws and regulations may significantly affect a Cannabis Company's ability to secure financing/traditional banking services, impact the market for cannabis business sales and services, and set limitations on cannabis use, production, transportation, export and storage. Cannabis Company's ability to secure financing and traditional banking services, impact the market for cannabis business sales and services, federal and international level. These laws and regulations may significantly affect a Cannabis Company's ability to secure financing and traditional banking services, impact the market for cannabis business sales and services, and set limitations on cannabis use, production, transportation, export and storage. The possession, use and importation of marijuana remains illegal under U.S. federal law. Federal law criminalizing the use of marijuana remains enforceable notwithstanding state laws that legalize its use for medicinal and recreational purposes. This conflict creates volatility and risk for all Cannabis Companies, and any stepped-up enforcement of marijuana laws by the federal government could adversely affect their value.

Investing in securities engaged in the social media industry include disruption in service caused by hardware or software failure; interruptions or delays in service by third-parties; security breaches involving certain private, sensitive, proprietary and confidential information managed and transmitted by social media companies; and privacy concerns and laws, evolving Internet regulation and other foreign or domestic regulations that may limit or otherwise affect the operations of such companies.

Information Technology companies can be affected by rapid product obsolescence, and intense industry competition. Risks include disruption in service caused by hardware or software failure; interruptions or delays in service by third-parties; security breaches involving certain private, sensitive, proprietary and confidential information managed and transmitted; and privacy concerns and laws, evolving Internet regulation and other foreign or domestic regulations that may limit or otherwise affect the operations.

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