MORNING BRIEFING
March 23, 2023

Communication Services & AI

Check out the accompanying chart collection.

Executive Summary: The S&P 500's Communication Services sector has outperformed all ten of its counterparts so far this year, up 18% ytd. Jackie examines the constituent industries and companies that have been driving the sector's strong showing, with a particular focus on Meta, up 68% ytd. … Also: Companies in diverse industries are harnessing the power of AI in manifold ways to help people work faster, smarter, and even more deceptively (beware of AI fakes!). This week's disruptive technologies segment highlights some of the players in the AI space and the innovative products they're turning out.

Communication Services: Tip of the Hat to Meta. While the S&P 500 Information Technology sector's outperformance has been impressive during the recent weeks of market upheaval, its ytd gains are outpaced by the S&P 500 Communication Services sector's. This top performing sector has produced a ytd gain of 17.9%, 1.5ppts better than the S&P 500 Information Technology sector's. Were it not for these two tech-heavy sectors, the S&P 500 would be in negative territory ytd instead of up 4.3% through Tuesday's close.

Here's the performance derby for the S&P 500 and its 11 sectors ytd through Tuesday's close: Communication Services (17.9%), Information Technology (16.4), Consumer Discretionary (12.6), S&P 500 (4.3), Industrials (0.5), Materials (0.0), Real Estate (-2.2), Consumer Staples (-2.5), Health Care (-6.0), Financials (-6.6), Utilities (-6.9), and Energy (-8.1) (*Fig. 1*).

The S&P 500 Communication Services sector has continued to lead the market in March, rising 8.3% mtd and nosing out the Information Technology sector's 6.2% mtd gain. Here's the performance derby for the S&P 500 and its sectors for the month of March through Tuesday's close: Communication Services (8.3%), Information Technology (6.2), Utilities (1.5), Consumer Staples (1.1), S&P 500 (0.8), Health Care (0.7), Consumer Discretionary (0.2), Industrials (-1.9), Energy (-3.2), Materials (-4.9), Real Estate (-5.2), and Financials (-10.2) (*Fig. 2*).

Let's take a deeper dive into Communication Services' worlds of advertising and social networking:

(1) *Thank Alphabet, Meta & Paramount.* Within the S&P 500 Communication Services sector are many market-outperforming constituent industries with ytd gains that dwarf the S&P 500's 4.3%.

Leading the pack with a 29.2% ytd gain is the S&P 500 Interactive Media Services industry—home to Meta Platforms (up 68.0% ytd) and Alphabet (up 19.3% ytd). Meta is having a banner year thanks to its new focus on cost cutting, its artificial intelligence (AI) initiatives, and the potential for its Reels platform to gain users if TikTok is banned in the US.

Not far behind is the S&P 500 Broadcasting industry, up 16.6% ytd, led by Paramount Global (CBS and Paramount Pictures), which has risen 25.9% ytd.

Here's how all of the industries in the S&P 500 Communication Services sector are performing ytd through Tuesday's close: Interactive Media Services (29.2%), Broadcasting (16.6), Movies & Entertainment (10.9), Advertising (8.5), Wireless Telecommunication Services (3.3), Interactive Home Entertainment (2.6), Integrated Telecommunication Services (-2.0), and Publishing (-11.1) (*Fig. 3* and *Fig. 4*).

Many of these industries were hurt in 2022 on expectations that a sharp slowing of advertising spending at year-end would continue into 2023. Global advertising spending is expected to rise 3.8% this year, far below 2022's 8.0% growth rate and 2021's 19.6% surge, according to a December 14 *report* by Dentsu International. Here is how advertising spending is expected to perform this year compared to last year in various channels: Digital (7.2% in 2023, 13.7% in 2022), Cinema (6.1, 24.7), Out-of-Home (2.0, 9.9), Radio (2.0, 3.6), Television (0.2, 1.7), and Print (-3.6, -5.3).

But late last year, with much of the bad news priced into the stocks, investors began to look past the valley to 2024, when global advertising growth is forecast to grow 4.8%. More recently, ad-generated revenue in many companies hasn't been as bad as feared. There's also some excitement about Meta and other players using AI to improve the ads served to viewers on their apps. The technology helped Meta's Q4 conversions rise more than 20%. AI "is the foundation of our discovery engine and our ads business," Meta CEO Mark Zuckerburg said during the company's Q4 earnings *conference call* on February 1.

The S&P 500 Advertising industry's stock price index has risen 8.5% ytd, almost twice the S&P 500's gain over the same period (*Fig. 5*). After slowing to 1.1% growth in 2022, the industry's revenue growth is expected to climb 4.0% this year and 4.6% in 2024 (*Fig. 6*). Earnings growth is more subdued, in the 5.3%-5.6% range from 2022 through 2024 (*Fig. 7*).

(2) *Meta course corrects.* Meta's shares have enjoyed quite a rebound from last year's 64.2% drop, reflecting concerns that the company was overspending at a time when its revenue growth had stalled. Meta's revenue declined in three of last year's four quarters, an abrupt reversal from the growth the company had enjoyed for years. Q4 revenue fell 4%, and Meta projects Q1 revenue of $26.0 billion to $28.5 billion, flattish compared with Q1-2022 revenue of $27.9 billion. Meanwhile, Meta's spending surged last year—up 23% y/y—as the company has been pouring money into developing the metaverse and AI.

CEO Zuckerburg began to rein in his spending ways late last year. He has announced two rounds of layoffs that will eliminate 21,000 jobs, or almost a quarter of the 87,314 people the company employed on September 30. In addition, 5,000 open jobs will go unstaffed, low-priority projects are being canceled, and costs throughout the organization are being slashed. The company expects 2023 expenses of $89 billion to $95 billion, below its previous forecast of $94 billion to $100 billion. Capital expenditures also are expected to be lower this year: $30 billion to $33 billion, down from management's previous guidance of $34 billion to $37 billion. Analysts have sharply increased their 2023 earnings estimates, to $9.94 a share from $8.22 a share just three months ago.

(3) *The TikTok opportunity.* Congress is debating whether the US arm of TikTok should be allowed to continue its unfettered access to US citizens given its Chinese ownership and fear that the Chinese government could use the app to collect information on US users. The company said it has a risk mitigation plan to safeguard US users' data, and its managers plan to testify before Congress today.

The US Committee on Foreign Investment in the US has told TikTok's parent, ByteDance, to sell its shares in the app or the app could face a US ban, a March 15 *WSJ* *article* reported. If Congress prohibited or limited TikTok's access to US customers, it could be a windfall for US social media competitors like Twitter and Meta's Reels, a service similar to TikTok. TikTok has more than 150 million monthly active users in the US who could be up for grabs.

(4) *Above-market growth.* Analysts expect the S&P 500 Interactive Media industry to produce earnings growth that beats the S&P 500's expected 0.3% earnings growth this year and 12.0% in 2024. The industry's revenue is expected to increase 5.1% this year and 11.7% in 2024 (*Fig. 8*). Earnings are also expected to be higher by a respectable 12.7% this

year and 20.7% in 2024 (*Fig. 9*). After more than a year in negative territory, net earnings revisions turned positive in March (*Fig. 10*). And while the industry's forward P/E has rebounded to 18.3 from its low of 15.5 in early November, it's far from its 32.3 peak in September 2020 (*Fig. 11*).

Disruptive Technologies: AI Everything. The announcements have come fast and furiously. Anyone who has anything to do with AI is broadcasting it to the world loudly. Chip manufacturers, software providers, social media companies, and the average Joe all are talking about how they're harnessing the power of AI to work faster and smarter. This week's news has been dominated by Nvidia's impressive AI offerings unveiled at its software developer conference and Google's rollout of Bard. Dare we suggest that it feels like the beginning of what will become the next big bubble?

This week has also brought the latest AI fake: A picture of former president Donald Trump resisting police arrest, an event that has not occurred but seems plausible given that a grand jury is considering whether to indict Trump over alleged hush-money payments to Stormy Daniels during the 2016 presidential campaign.

The fake picture was generated by Elliott Higgins, founder of Bellingcat, an independent international collective of researchers, investigators, and citizen journalists, a March 21 *ARS Technica* *article* reported. He used AI engine Midjourney V5 to generate the image he initially posted on Twitter. Even though Twitter prohibits users from sharing share synthetic or manipulated media, the picture has gone viral.

Here are some of the latest developments in the expanding world of AI:

(1) *Nvidia wows the crowds.* In the AI space, Nvidia has been investors' darling; they've bid its shares up a steep 79.3% ytd through Tuesday's close. The tech company held a software developer conference this week highlighting chips with various AI capabilities and revealing its DGX cloud service. Through DGX, companies will rent space on supercomputers that use Nvidia chips to develop AI technologies for the price of $37,000 a month, a March 21 Reuters *article* reported. The company is working with cloud providers Oracle, Microsoft, and Alphabet.

Nvidia also introduced three new services that companies can use to develop their own AI applications trained on their own data. NeMo generates language, Picasso can produce images and videos, and BioNeMo allows players in the life-science industry to "generate scientific texts using biological data," a March 21 *Venture Beat* *article* explained.

(2) *Google's Bard now available.* Google opened public access in the US and UK to Bard, its ChatGPT alternative. "Bard is designed to respond to written prompts using information sourced from websites such as Wikipedia and can handle follow-up questions in a conversational manner," a March 21 *WSJ* *article* reported. Google still considers Bard an "early experiment" and posts the following disconcerting message at the bottom of its site: "Bard may display inaccurate or offensive information that doesn't represent Google's views."

Meanwhile, OpenAI rolled out a new and improved version of ChatGPT, GPT-4, which will be used in Microsoft's search engine, Bing. And not to be left behind is China's search engine company Baidu, which introduced its chatbot Ernie earlier this month; but the lack of a live demonstration disappointed some observers.

(3) *Software gets an AI facelift.* Software companies are racing to infuse their existing software products with new AI capabilities. Microsoft is using ChatGPT throughout its enterprise software products—Word, Excel, and Windows—as well as its Bing search engine.

Business Chat is a new feature that can access information across Microsoft's office products. For example, an employee could ask Business Chat for a customer update, and a response will be generated using information found in emails, meeting notes, and other documents, a March 16 *NYT* *article* explained. Copilot is a service that can write as guided in a Word document.

Google also plans to update Gmail and Google Docs with AI, allowing them to draft emails and other documents from simple written prompts. Google also introduced the Generative AI App Builder, so software developers can create their own chatbots for business and governments, just as developers created apps for the iPhone.

Adobe and Salesforce have introduced AI tools into their software products. Roblox envisions AI automating the basic coding tasks involved with creating a video game so that the programmer can focus on creative work. And C3AI was created to offer AI applications to companies.

(4) *Consumers and companies get converted.* Consumers are taking to ChatGPT like a fish takes to water. Who wouldn't want a way to save time and look smart (assuming that ChatGPT's answers are correct)? Software engineers appear to be big fans of AI, which helps them write code. Lawyers are using it to summarize case law, and workers are using

it to rewrite drafts to sound more informative or concise, a March 22 *WSJ* *article* reported. Conversely, companies are scrambling to ensure that employees don't reveal any trade secrets or produce material with incorrect information.

Investment bankers and investors might want to give AI a chance, too. PitchBook has launched VC Exit Predictor, a program that uses PitchBook data about the venture capital industry to forecast a startup's growth prospects, a March 20 TechCrunch *article* reported. "It generates a score on the probability that it'll be acquired, go public or not exit due to becoming self-sustaining or experiencing any event (e.g. bankruptcy) that prevents an exit," the article explained. Developed using a machine learning algorithm, the program was 75% accurate when tested using historical data.

More than 75% of venture capital and early-stage investor executive reviews will use AI and data analytics by 2025, according to research firm Gartner. Venture capital firms SignalFire, EQT Ventures, and Nauta Capital already are using AI to flag potential winning investments. There are concerns that programs based on historical data may be disadvantageous to companies led by women or minorities.

Calendars

US: Thurs: Initial & Continuous Jobless Claims 197k/1.684m; New Home Sales 650k; Kansas City Manufacturing Index; Chicago Fed National Activity; Natural Gas Storage. **Fri:** Durable Goods Orders, Total, Core, and Core Nondefense Capital Goods Orders 0.6%/0.2%/0.1%; C-PMI, M-PMI, and NM-PMI Flash Estimates 47.5/47.0/50.0; Baker-Hughes Rig Count; Bullard. (Bloomberg estimates)

Global: Thurs: Eurozone Consumer Confidence -18.3; UK Gfk Consumer Confidence -36; Japan Core CPI 3.1% y/y; Japan M-PMI 48.2; BOE Interest Rate Decision 4.25%; BOE Inflation Letter; EU Leader Summit; Balz; Wuermeling; Mann. **Fri:** Eurozone, Germany, and France C-PMI Flash Estimates 51.9/51.0/51.8; Eurozone, Germany, and France M-PMI Flash Estimates 49.09/47.0/48.0; Eurozone, Germany, and France NM-PMI Flash Estimates 52.5/51.0/52.5; Spain GDP 0.2%q/q/2.7%y/y; UK C-PMI, M-PMI, and NM-PMI Flash Estimates 52.7/50.0/52.5; UK Headline & Core Retail Sales 0.2%m/m/-4.7%y/y & 0.1%m/m/-4.7%y/y; EU Leaders Summit; Nagel; Pill; Mann. (Bloomberg estimates)

Strategy Indicators

Stock Market Sentiment Indicators (*link*): The *Bull-Bear Ratio* fell for the second week to 1.38 this week, after climbing from 1.33 to 1.83 during the first week of this month; it was at 1.89 during the February 7 week—which was highest since early January 2022. *Bullish* sentiment sank for the second week from 45.2% during the first week of March to 39.7% this week, back near the 38.4% percentage during the final week of February, which was the lowest since the start of this year. It was at 48.6% during the February 7 week—which was the highest percentage since the first week of 2022. Bulls outnumbered bears for the 18th consecutive week. Meanwhile, *bearish* sentiment climbed for the second week to 28.8% after falling from 28.8% to 24.7% two weeks ago—which was the fewest bears since January 2022. Recent readings are well below the 44.1% reading in early October of last year. The *correction count* slipped to 31.5% after edging up from 30.1% to 31.9% last week—remaining well below its late September 2022 peak of 40.3%. Turning to the *AAII Sentiment Survey* (as of March 16), bearish sentiment jumped while bullish sentiment sank to a six-month low, and neutral sentiment moved slightly lower. The *percentage expecting stock prices to rise* over the next six months dropped 5.6ppts to 19.2%—the lowest since the September 22, 2022 week's 17.7% reading. Optimism was at an unusually low level for the fourth successive week and the 44th time in the past 63 weeks. It's below its historical average of 37.5% 67 of the last 69 weeks. The *percentage expecting stocks to fall* over the next six months jumped to 48.4%, the highest since the December 12, 2022 week's 52.3%, after falling from 44.8% to 41.7% the prior week. Pessimism was at an unusually high level for third straight week and the 42nd time in the past 63 weeks, and above its historical average of 31.0% 64 of the past 69 weeks. The *percentage expecting stock prices will stay essentially unchanged* over the next six months ticked down from 33.4% to 32.4%, though remains above its historical average of 31.5% for the 11th consecutive week—the longest stretch of above-average readings since a 22-week string between August 2019 and January 2020.

S&P 500 Sectors Net Earnings Revisions (*link*): The S&P 500's NERI was negative for a ninth straight month in March, but remained steady m/m at a seven-month high of -7.3%. That's up from a 30-month low of -15.6% in December. It had been negative for 13 straight months through July 2020 due to the pandemic shutdown. The 23-month positive streak that ended in June 2022 had exceeded the prior 18-month positive streak during the cycle that ended October 2018, when NERI reached a tax-cut-induced, then-record high of 22.1% in March 2018. March's reading compares to a record-high 23.1% in July 2021 and an 11-year low of -37.4% in May 2020. All 11 sectors had negative NERI in March, compared to

10 with negative readings in February. Among the 11 sectors, just four improved m/m: Communication Services, Health Care, Industrials, and Tech. Communication Services was negative for a 17th month, and Consumer Discretionary and Health Care for a 12th month. Here are the March NERIs for the S&P 500 and its sectors compared with their February readings: Consumer Staples (-0.6% in March, down from 1.1% in February [12-month high]), Industrials (-3.0, -4.5), Information Technology (-3.3, -6.1), Health Care (-4.2 [11-month high], -5.5), S&P 500 (-7.3, -7.3), Communication Services (-7.4 [14-month high], -9.0), Utilities (-8.4 [32-month low], -8.2), Consumer Discretionary (-8.7, -6.0), Financials (-11.6 [33-month low], -10.6), Real Estate (-13.2, -11.0), Energy (-17.0 [33-month low], -13.4), and Materials (-19.3, -16.7).

S&P 500 Sectors Net Revenue Revisions (*link*): The S&P 500's NRRI improved for a fourth straight month in March and was positive for a second month. It improved to a nine-month high of 1.8% in March from 0.8% in February. Before the 24-month positive streak ended in August, it had been negative for 21 straight months. That positive streak exceeded the prior 19-month streak during the cycle that ended in October 2018, when NRRI reached a tax-cut-induced then-record high of 14.7% in March 2018. March's reading compares to a record-high 25.9% in August 2021 and an 11-year low of -35.8% in May 2020. Six of the 11 S&P 500 sectors had positive NRRI in March, unchanged from a month earlier and up from four in the prior three months. Six sectors had NRRI move higher m/m, down from eight improving in February. Utilities' NRRI turned positive m/m, but these three sectors turned negative: Consumer Staples, Financials, and Materials. Communication Services was negative for a 17th straight month, followed by Tech at nine months and Materials at eight. Here are the March NRRIs for the S&P 500 and its sectors compared with their February readings: Consumer Staples (19.5% in March, down from 21.2% in February [25-month high]), Utilities (11.9, 3.6 [12-month low]), Health Care (9.0 [14-month high], 6.9), Industrials (8.2 [nine-month high], 5.9), Consumer Discretionary (4.8 [12-month high], 3.0), S&P 500 (1.8 [nine-month high], 0.8), Financials (1.5, 3.3 [nine-month high]), Real Estate (-0.9 [25-month low], -0.4), Materials (-5.3, -4.0), Information Technology (-5.7 [eight-month high], -7.7), Communication Services (-11.1 [11-month high], -12.6), and Energy (-25.8 [33-month low], -19.3).

S&P 500 Earnings, Revenues, Valuation & Margins (*link*): The S&P 500's forward profit margin fell 0.1ppt w/w during the March 16 week to a 23-month low of 12.3%. That's down 1.1ppts from its record high of 13.4% achieved intermittently in 2022 from March to June. It's now 2.0pts above its seven-year low of 10.3% during April 2020. Forward revenues improved 0.3% w/w to a record high during the March 16 week. Forward earnings fell 0.1% w/w to 5.3% below its record high during the June 16, 2022 week. Both had been steadily making new highs from the beginning of March 2021 to mid-June; prior to that, they peaked just before Covid-19 in February 2020. The consensus expectations for forward revenues growth remained steady w/w at 2.6%, barely above its 33-month low of 2.3% during the February 23 week. That's down from a record high of 9.6% growth at the end of May 2021 and compares to 0.2% forward revenues growth during April 2020, which was the lowest reading since June 2009. Forward earnings growth of 4.2% was also unchanged w/w, but not much above its 31-month low of 3.5% in mid-February. That's down from its 23.9% reading at the end of April 2021, which was its highest since June 2010 and up substantially from its record low of -5.6% at the end of April 2020. Analysts expect revenues to rise 1.7% in 2023 (unchanged w/w) and 4.8% in 2024 (unchanged w/w) compared to a revenue gain of 12.2% in 2022. They expect earnings gains of 0.3% in 2023 (unchanged w/w) and 12.0% in 2024 (up 0.1ppt w/w) compared to an earnings gain of 7.1% in 2022. Analysts expect the profit margin to drop 0.2ppt y/y to 12.1% in 2023 (unchanged w/w) compared to 12.2% in 2022 and to rise 0.8ppt y/y to 12.9% in 2024 (down 0.1ppt w/w). The S&P 500's weekly reading of its forward P/E fell 0.4pt w/w to 17.3, and is down 1.2pt from a 43-week high of 18.5 during the February 16 week. That's up from a 30-month low of 15.3 in mid-October. It also compares to 23.1 in early September 2020, which was the highest level since July 2000 and up from a 77-month low of 14.0 in March 2020. The S&P 500 weekly price-to-sales ratio fell 0.06pt w/w to 2.13 and is down from a 24-week high of 2.29 during the February 16 week. That's up from a 31-month low of 1.98 in mid-October and down from a four-month high of 2.38 in mid-August, and also compares to a record high of 2.88 at the end of 2021 and a 49-month low of 1.65 in March 2020.

S&P 500 Sectors Earnings, Revenues, Valuation & Margins (*link*): Looking at the 11 S&P 500 sectors, the March 16 week saw consensus forward revenues and earnings rise for six sectors and fall for five. The forward profit margin rose w/w for two sectors and fell for four. Three sectors have forward revenues at a record high this week: Consumer Staples, Industrials, and Utilities. Among the remaining eight sectors, only three are more than 2.0% below their post-pandemic highs: Energy, Materials, and Tech. Consumer Staples is the only sector with forward earnings at a record high. Among the remaining 10 sectors, just three have forward earnings that remain relatively strong, down less than 1.5% from their post-pandemic highs: Financials, Industrials, and Utilities. Since mid-August, all sectors have seen forward profit margins retreat from their record highs. Those of Industrials and Tech remain closest to their post-pandemic highs. Energy and Industrials were the only two sectors to have their profit margins improve y/y for full-year 2022, and these five sectors are expected to improve y/y in 2023: Communication Services, Consumer Discretionary, Financials, Industrials, and Utilities. Here's how they rank based on their current forward profit margin forecasts along with their record highs: Information Technology (24.1%, unchanged w/w and down from its 25.4% record high in June 2022), Financials (17.5, unchanged w/w at a 22-month low and down from its 19.8 record high in August 2021), Real Estate (16.5, down 0.1pt w/w to a 48-week low and down from its 19.2 record high in 2016), Communication Services (14.5, up 0.1pt w/w and down from its 17.0 record high in October 2021), Utilities (13.2, down 0.1pt w/w to a 38-month low and from its 14.8 record high in April 2021), S&P 500 (12.3, down 0.1pt w/w to a 23-month low and down from its record high of 13.4 achieved intermittently in 2022 from March to June), Energy (11.8, down 0.1ppt w/w to an eight-month low and from its 12.8 record high in November), Materials (11.1, up 0.1pt w/w from a 25-month low and down from its 13.6 record high in June), Industrials (10.1, unchanged w/w and down from its 10.5 record high in December 2019), Health Care (9.6, unchanged w/w at a record low and down from its 11.5 record high in March 2022), Consumer Discretionary (7.1, unchanged w/w at a 21-month low and down from its 8.3 record high in 2018), and Consumer Staples (7.0, down 0.1pt w/w to a 62-month low and from its 7.7 record high in June 2020).

S&P 500 Sectors & Industries Forward Profit Margin Since Peak (*link*): Since the S&P 500's forward profit margin peaked at a record-high 13.4% during the June 9 week, it has fallen 8.2% to 12.3% through the March 16 week. All sectors are now down since the peak, with the S&P 500's drop paced by five of the 11 sectors. Here's the sector performance since the June 9 peak: Energy (down 0.7% to 11.8%), Industrials (down 2.7% to 10.1%), Utilities (down 4.3% to 13.2%), Consumer Staples (down 5.0% to 7.0%),Information Technology (down 5.2% to 24.1%), Real Estate (down 7.7% to 16.5%), S&P 500 (down 8.2% to 12.3%), Financials (down 8.2% to 17.5%), Consumer Discretionary (down 8.6% to 7.1%), Communication Services (down 10.2% to 14.5%), Health Care (down 12.3% to 9.6%), and Materials (down 18.6% to 11.1%). These are the best performing industries since the June 9 peak: Casinos & Gaming (up 70.4% to 3.8%), Wireless Telecommunication Services (up 70.2% to 11.5%), Oil & Gas Refining & Marketing (up 64.9% to 5.6%), Airlines (up 30.6% to 5.3%), Reinsurance (up 21.7% to 14.2%), and Oil & Gas Equipment & Services (up 19.1% to 11.0%). The worst performing industries since the June 9 peak: Alternative Carriers (down 81.8% to 1.6%), Commodity Chemicals (down 42.2% to 5.9%), Home Furnishings (down 39.0% to 5.4%), Copper (down 36.1% to 12.3%), Housewares & Specialties (down 35.5% to 5.4%), and Health Care REITs (down 35.3% to 4.3%).

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