

The future of school and play: STOXX Global Digital Entertainment and Education Index

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Table of Contents

1. Introduction	3
2. Index overview	5
3. Drivers of performance between 2015 and 2022	7
4. Market conditions since the official index launch	10
5. Conclusion	11
6. Contacts & Information	12

1. Introduction

The **STOXX® Global Digital Entertainment and Education Index** (GDEE Index) captures the global digital transformation of entertainment and education – a long-term structural change. Between 2015 and 2022, the index outperformed both the global market and the STOXX Global 3000 Media Index, and demonstrated similar performance (with different drivers) to the STOXX Global 3000 Technology Index. The individual characteristics of the stocks in the GDEE are what set it apart: The Specific Return factor made the largest positive contribution to the seven-year return of all the indices in the study.

The sub-themes of the index are summarized below, demonstrating the evolution and capture of entertainment and education.

Why digital entertainment and education?

A wave of innovation has embedded technology in most aspects of our lives, shifting more human activity to the digital space. The digital transformation process was accelerated by the COVID-19 pandemic, when the digitalization of the economy helped human activity continue during the lockdowns. However, changes in society started before the pandemic, was sped up by it, and will be with us for the long term. Our lives are becoming more virtual, with people communicating, working, shopping, entertaining and educating themselves remotely.

Entertainment

Entertainment and education have seen greater demand for digital experiences. Ubiquitous internet connectivity makes it easy to digitally access (stream) entertainment content, resulting in new entertainment media and new business models. Digital entertainment consumption has more than doubled since 2017. Of course, the largest annual increase was recorded in 2020, when virtually the entire world experienced severe lockdowns. But even in 2021, when the world was slowly coming back to normal, digital consumption continued to rise significantly (by approximately 20%)¹.

Gaming

Video gaming has gone mainstream, becoming one of the fastest growing forms of media. Driven in part by the pandemic, the gaming industry has boomed in recent years to provide compelling entertainment at a reasonable cost. It already outstrips the movie industry in terms of annual gross revenue, and growth is likely to accelerate in the years ahead as metaverses emerge.

The number of video game players in the world is projected to exceed three billion within the next couple of years². The adoption of cloud gaming and gaming as a service, along with the enhanced gaming experience now on offer, are strong drivers for the sector. What is more, better internet connectivity will accelerate cloud gaming, particularly in countries where gaming hardware tends to be relatively expensive. In addition, gaming subscriptions and in-game transactions are new monetization opportunities that can potentially become a regular revenue stream.

¹ Source: Theme Report 2021, Motion Picture Association, accessed on April 27, 2022.

² Source: Newzoo, 2021 report.

Finally, the immersive gaming experience offered by artificial intelligence, and augmented and virtual reality, will attract increasing levels of interest – especially since blockchain technology is adding real economic value to items purchased or earned through games.

Education

The gamification of education and increased demand for online courses are some of the major factors driving the growth of the digital education market. Engaging learners through games and new experiences has made the learning process more enjoyable, more rewarding and more attractive. Online courses offer flexible access to education and training, allowing students and employees to take them regardless of their location. Education is in the early stages of digitalization and digital education could therefore see tremendous growth in the near future as new technologies emerge.

Metaverse

Metaverse momentum is building, and gaming companies are playing a central role in its development by building virtual worlds, supporting online communities and creating the next-generation electronic devices needed to support these new virtual worlds. These parallel places to the physical world will bring together economic, social, media and enterprise-related aspects, and therefore represent the next frontier in technological innovation.

The metaverse will become a marketplace for virtual real estate, non-fungible tokens (NFTs) and cryptocurrencies. Online communities will be enriched through better communication, messaging and relationship building. Media will play a large role in the metaverse through video, music and concert streaming, and online gaming and gambling. Online learning could also be boosted by new virtual content creation and recruitment.

In summary, gaming companies already possess many of the foundational elements for the metaverse, which opens up a multitude of opportunities for sharing entertainment and knowledge, and hence revolutionizing learning across generations.

Platforms and devices

Digital entertainment and education content rely heavily on content platforms and electronic devices. Connectivity across platforms allows increased, seamless delivery of content to a larger audience, while electronics companies are key to enabling digital consumption and are driving innovation.

2. Index overview³

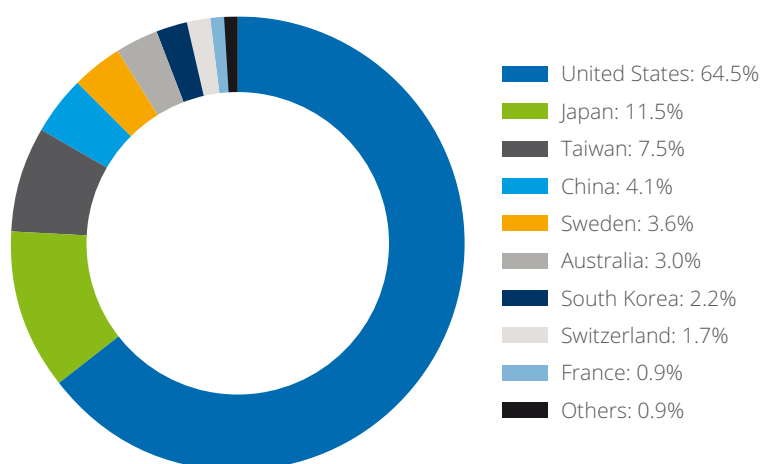
The STOXX Global Digital Entertainment and Education Index captures these themes by holding companies that are engaged in:

- a) the gaming business (e.g., game developers, console makers and semiconductor producers)
- b) digital entertainment (e.g., media download and streaming digital content sites)
- c) digital education (e.g., online training and educational software)
- d) producing electronic devices (such as smartphones, laptops, peripherals and other devices)
- e) building content platforms (digital media platforms and media software)

These companies are located around the world, with the US (64.5%), Japan (11.5%) and Taiwan (7.5%) having the largest country weights in the index (Figure 1). The stocks in the index belong to six industry groups that fall under the three sectors below (Figure 2):

- i. Communication Services (47%): Media & Entertainment
- ii. Information Technology (43%): Semiconductors & Semiconductor Equipment, Technology Hardware & Equipment, Software & Services
- iii. Consumer Discretionary (10%): Consumer Services, Consumer Durables & Apparel

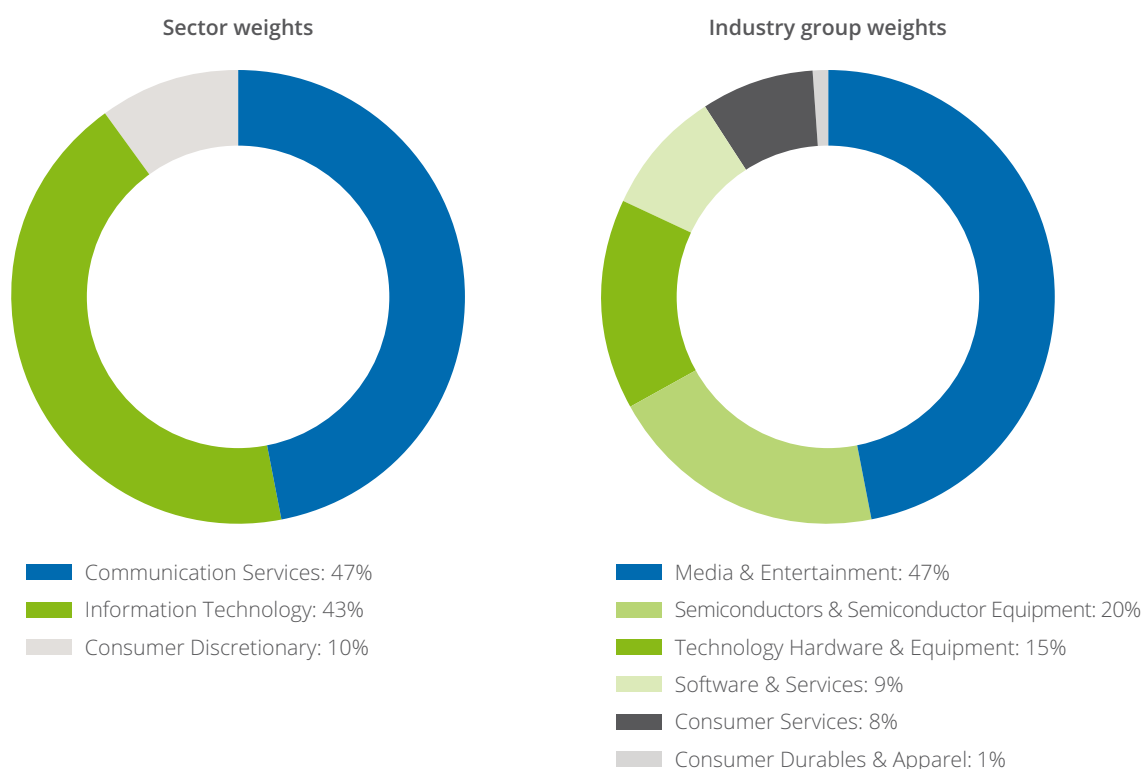
Figure 1: Country weight as of May 31, 2022



Source: Qontigo.

³ I would like to thank our colleague Twinkle Singh for her help on this study, and especially on the data front.

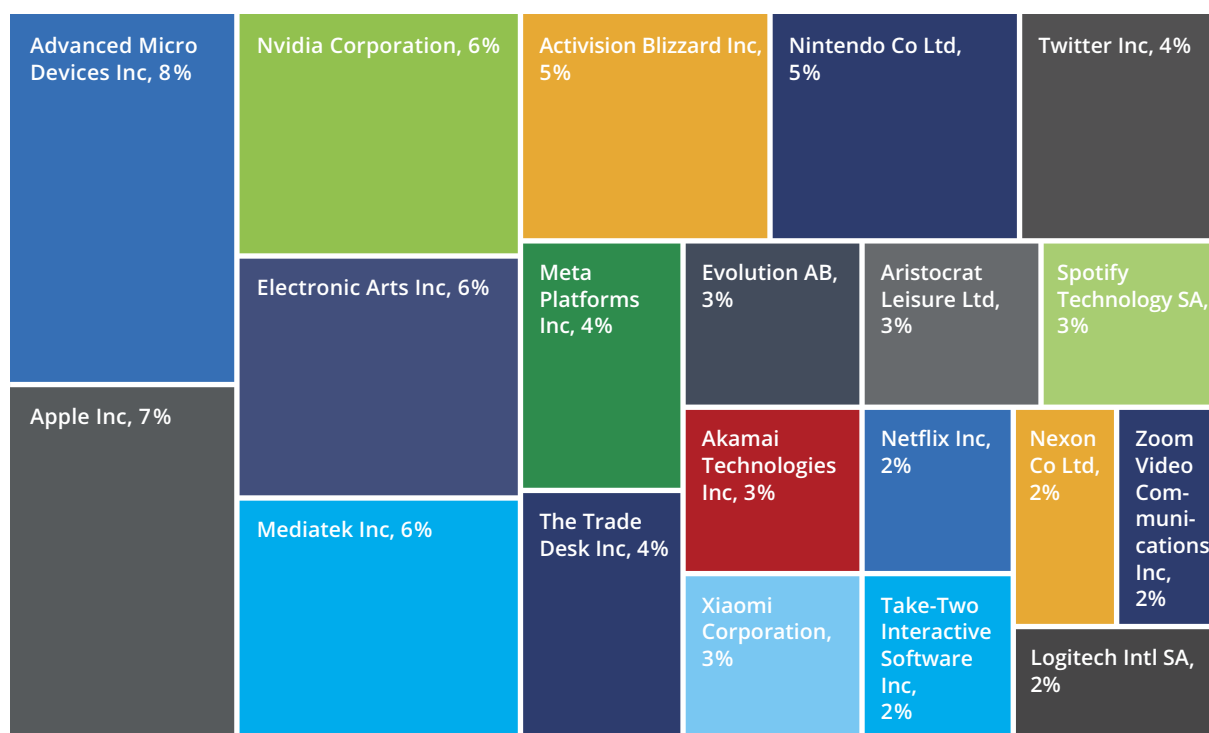
Figure 2: GICS sector and industry group weights as of May 31, 2022



Source: Qontigo. GICS classification of sectors and industry groups.

To provide greater context, this study compared the STOXX Global Digital Entertainment and Education Index (GDEE Index) return characteristics and overall performance to those of the market (as represented by the STOXX Global 3000 Index) and of the STOXX Global 3000 Technology (Global Tech) and STOXX Global 3000 Media (Global Media) indices.

Figure 3 on page 7 shows the top 20 stocks in the GDEE. No asset's weight exceeded 8% on May 31, 2022. In contrast, Global Tech's largest index weight was 18% (Apple), followed by Microsoft (16%), while Disney (29%) and Netflix (13%) together made up more than 40% of the Global Media index.

Figure 3: Top 20 stocks by weight

Source: Qontigo.

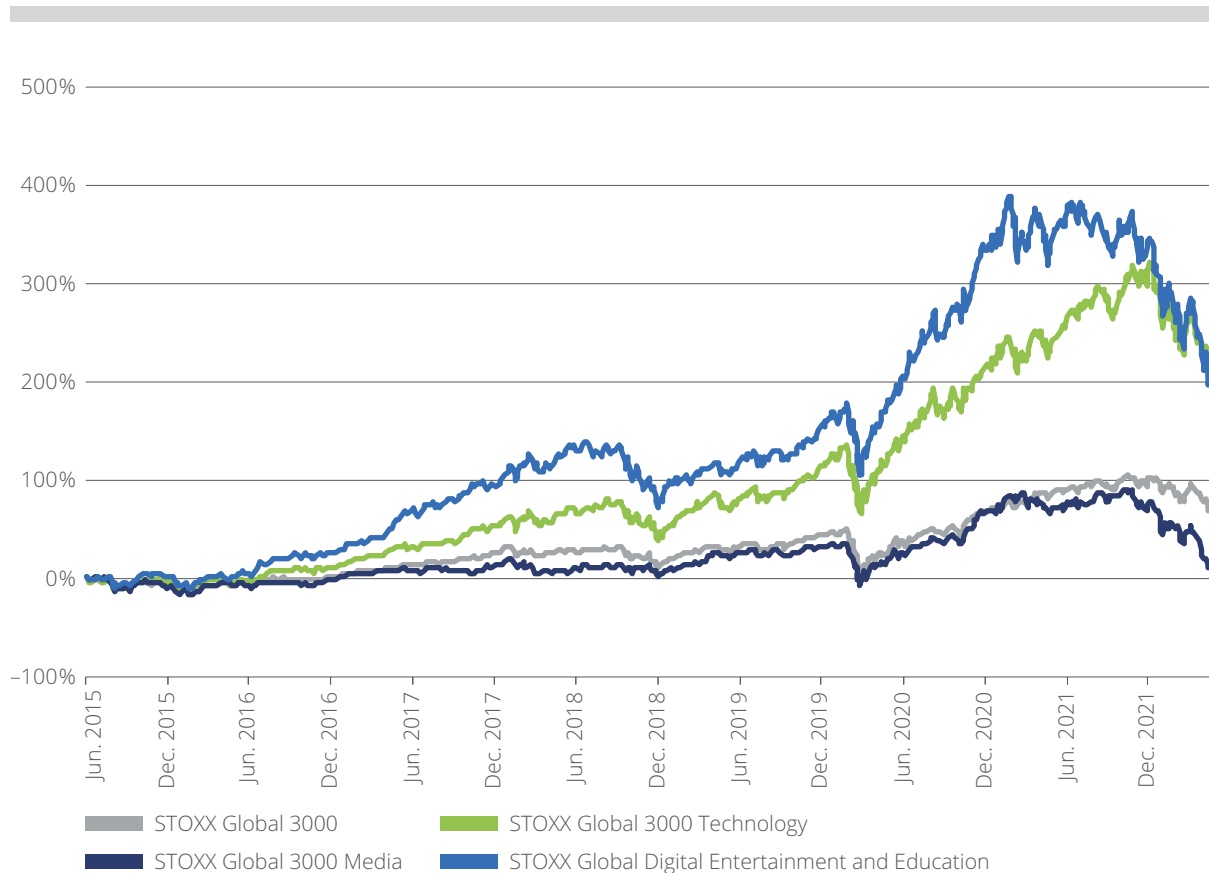
3. Drivers of performance between 2015 and 2022

Thematic investing focuses on structural trends that transcend the traditional business cycle. It is long-term investing, allocating capital to trends that exhibit extended structural growth. The GDEE captures the prolonged process of digital transformation in entertainment and education.

The GDEE strongly outperformed both the market as a whole and Global Media over the past seven years, and had a similar return to that of the Global Tech Index (Figure 4). The GDEE's cumulative return from June 22, 2015, to May 31, 2022, was 215%⁴.

The index outperformed the market by nearly 140 percentage points, and Global Media by 200 basis points, on a cumulative basis. Its annualized return of 17% resulted in active returns of 9% versus the Global 3000 and 15% versus Global Media for the seven-year period.

⁴ The period June 22, 2015 – October 12, 2021, covers backtest data, while the period October 13, 2021 – May 31, 2022, covers live index data. The GDEE Index was officially launched on October 13, 2021.

Figure 4: Historical performance: The cumulative index return for June 22, 2015 – May 31, 2022

Source: Qontigo.

The largest contributors to each index's return were the Market, Industry and Specific Return factors, as measured by the Axioma Worldwide Fundamental Medium-horizon Risk Model.

The seven-year period under study falls within the longest bull market in US history (2009 – 2021). Since the US market dominates the four indices under review – Global 3000, Global Tech, Global Media and the GDEE Index – it is not surprising that the Market factor lifted them all. The market rise contributed about seven percentage points to the the individual indices' annualized return. As might be expected, the Market component was almost entirely responsible for Global 3000's index return of 8% (Figure 5).

In aggregate, industry exposures⁵ benefited the Global Tech and GDEE indices, hurt Global Media and had a relatively low (but still positive) impact on Global 3000.

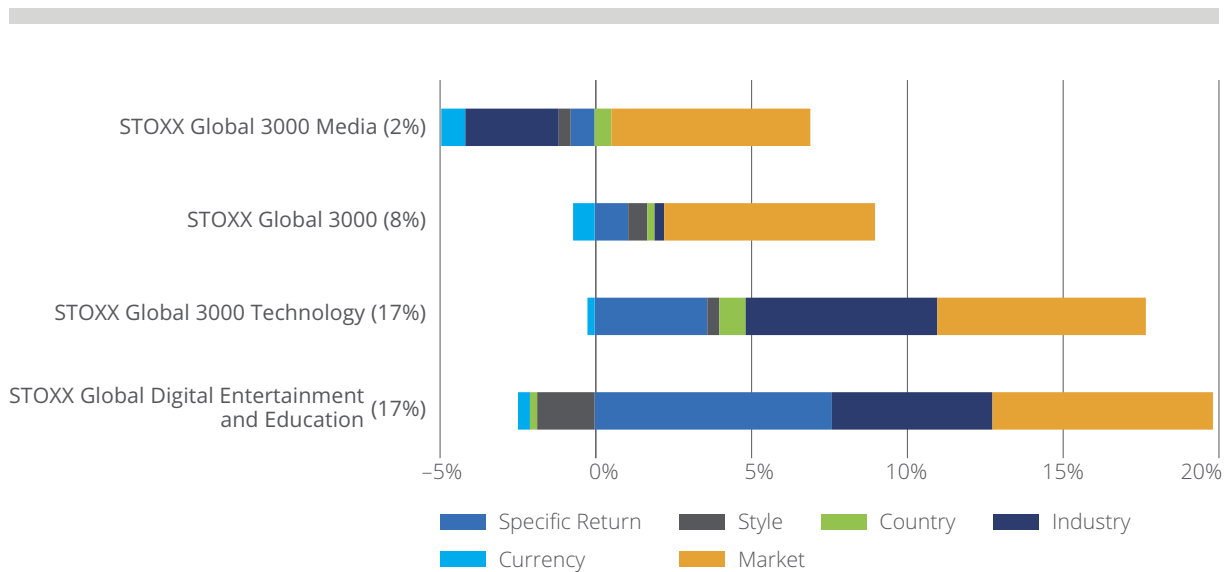
⁵ A fundamental risk model calculates exposures to the factors in the model for each asset in the model universe. An asset's exposure to a factor denotes its sensitivity/beta/loading to that factor. Aggregating the exposures of each asset in a portfolio gives us the portfolio's exposure to the factor.

The GDEE saw the biggest positive specific return – i.e., the individual characteristics of the assets in the index (rather than market or industry considerations) made the largest contribution to the index gain over the past seven years. In other words, the names in the GDEE generated higher returns than would be accounted for by its Industry, Country, Currency, and Style exposures alone. This is what we would expect to see in a thematic index that focuses on selecting stocks which are deriving revenues from theme-relevant sub-industries rather than selecting traditional industries.

The Style factor group detracted from the GDEE’s index return but had little impact on the other indices. More specifically, the Style factor culprits were Dividend Yield, Value, Market Sensitivity and Volatility. Tech stocks typically have a lower dividend yield and do not lean on Value, meaning that they missed the benefits of the Dividend Yield and Value factors rising this year. The names in the GDEE Index tend to have higher betas (i.e, the index showed large positive exposures to the Market Sensitivity factor), and that characteristic makes the index more vulnerable to big market declines.

However, Volatility made by far the largest negative contribution to the index return. This style factor recorded an unusually large negative return from the beginning of 2021 onwards, as investors flocked to safety and away from high-volatility stocks. The GDEE has a large positive exposure to Volatility (i.e. it holds high-volatility stocks) and as a result, Volatility significantly dragged down the index.

Figure 5: Factor contribution 2015 – 2022 (annualized return in paranthesis)



Source: Qontigo.

4. Market conditions since the official index launch

Equity markets in general, and technology stocks in particular, have been battered since November 2021. This was when market participants started worrying about inflation and a potential slowdown in global economic growth, as central banks signaled aggressive interest rate hikes. Higher rates negatively affected growth stocks (such as tech stocks), and the Global Tech, Global Media and GDEE indices have all underperformed the market over the past seven months.

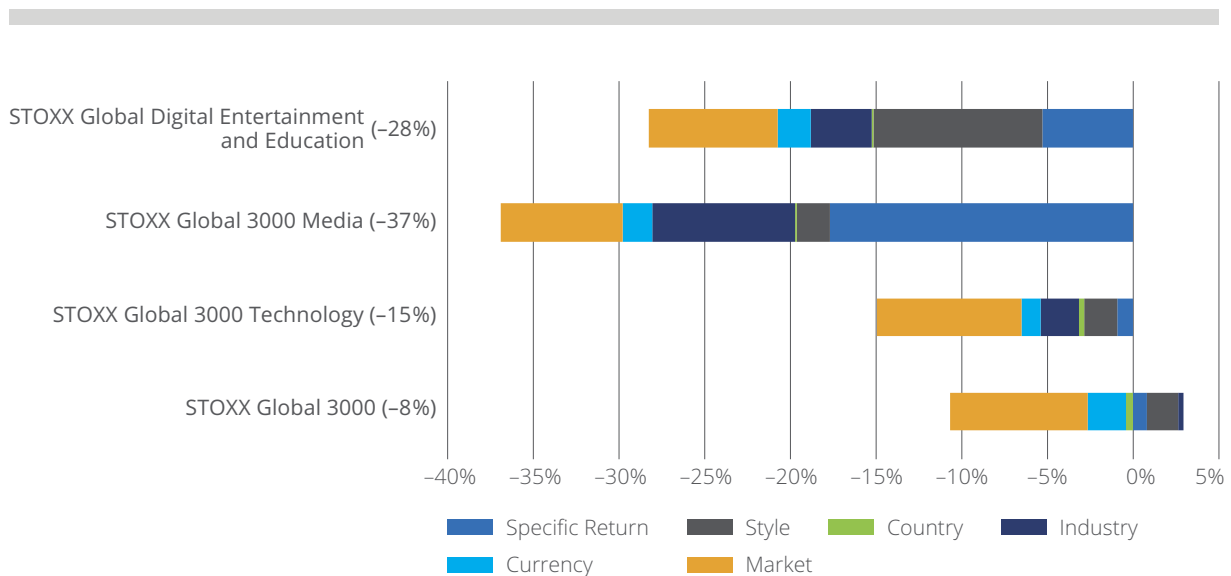
As in the past, the Market factor was the main driver of the Global 3000, which has fallen 8% since mid-October 2021. By contrast, Market and Industry factors were among the main negative contributors to the seven-month returns of the other three indices (Figure 6).

Of the four indices we studied, Global Media was the largest market underperformer, falling nearly 40% since October 2021. It saw the largest negative stock-specific contribution (-18 percentage points), plus substantial negative market and industry contributions.

The GDEE also recorded a negative stock-specific contribution, although this was of a smaller magnitude. However, it did see the largest negative contribution from the Style factor group of all the indices. More specifically, it was the index’s high-volatility and high-growth characteristics that dragged it down when both Volatility and Growth style factors collapsed in recent months.

The GDEE outpaced Global Media by 9% but underperformed Global Tech by 13% between October 13, 2021, and May 31, 2022.

Figure 6: Factor contributions since the official index launch: October 13, 2021 – May 31, 2022 (cumulative returns in paranthesis)



Source: Qontigo.

5. Conclusion

The global convergence of multiple technologies has resulted in a wave of innovation that has made our lives more digital. The STOXX Global Digital Entertainment and Education Index is a thematic index that captures the digital transformation of entertainment and education, and has seen strong positive returns over the past seven years. Unsurprisingly, the index has been hurt by the recent fall in global equity markets, and in technology stocks in particular. However, it should be borne in mind that thematic indices are by definition built to capture long-term structural changes. Looking forward, the index is well positioned to capitalize on the innovation trends surrounding the transformation of education and entertainment to a more digital world.

6. Contacts & Information

Learn more about how Qontigo can help you better manage risk and enhance your investment process.

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