

TAG MEDIA & ENTERTAINMENT ECOSYSTEM REPORT 2021

A Diverse and Dynamic Industry



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A LETTER FROM TAG MEDIA & ENTERTAINMENT SOCIETY CO-CHAIRS

Welcome to the inaugural Ecosystem Report from the Technology Association of Georgia (TAG) on the Media & Entertainment industry.

Our vision for this report is to share more about how and why Media & Entertainment is such an important and exciting part of the Georgia economy. We will look more closely at selected subsectors, from filmed entertainment to video gaming and beyond, and provide insights into the technology and business strategies that make them tick.

We have identified 713 Media & Entertainment companies that are either headquartered in Georgia or have a significant presence in the state. The combined Media & Entertainment subsectors generate an estimated \$14 billion to the Georgia economy annually and employ an estimated 40,000 people. You will find a list of the Media and Entertainment companies by subsector on pages 35-38. We hope you will be impressed with the breadth and scope of the organizations listed.

We have at least three primary goals for the Media & Entertainment Ecosystem Report. First and foremost, we will use it as a catalyst to bring together the thousands of talented people involved in the industry in Georgia. As we consider the talent across industry verticals, we felt it would be powerful to create a way to bring them together. Second, we will cast a spotlight on the quality work that is being done in Georgia across all subsectors to the world around us. As investors look for opportunities, we want to help them understand how the Georgia Media & Entertainment companies can generate strong returns. Third, we will enable a broader audience to understand more about the industry's impact and the opportunities to open meaningful dialog about technology, creativity, opportunity, and inclusion.

We know that time is precious and encourage you to engage with TAG to improve the Georgia Media & Entertainment capabilities and culture. Please help us to share the excitement that drives this industry, and the enjoyment that it generates around the world. Let's tell our story by applauding the innovative technology advancements that we have made and push ourselves to make even more. Together with TAG, we certainly have the resources and energy to amplify the world-class capabilities and broad impact that Georgia offers in the field of Media & Entertainment.

Please enjoy the ecosystem report and engage with us.

Sincerely,



Louis Gump
TAG Media & Entertainment Society Co-Chair
Senior Vice President and General Manager
Cox Media



Quincy Johnson
TAG Media & Entertainment Society Co-Chair
Vice President of Distribution, Partner Operations
WarnerMedia

B EXECUTIVE OVERVIEW

The past 18 months has been tough on all businesses because of the COVID-19 pandemic. The Media & Entertainment (M&E) industry is no exception. But M&E had one simple thing going for it that few other businesses had - when times are tough (and they were) people need entertainment to brighten their lives. When combining all the sectors together, it is projected that M&E will see a CAGR of 6% in the United States through 2024. Georgia will generally fall in line with U.S. performance numbers.

This is the Technology Association of Georgia's first look at the M&E ecosystem. For half of the six M&E subsectors we will review, revenues have been down due to the pandemic while the other half have seen some modest growth. Some of these sectors, such as film and television, will rebound as life gets back to some semblance of normal. But, as some sectors are redefining themselves such as radio and publishing, revenues over the next several years will continue to drop. For this report, TAG selected 713 companies to represent Georgia's M&E ecosystem (out of a potential 1,835 organizations). Based on industry data gathered from multiple sources we estimate that the Georgia ecosystem generates \$14.7 billion in revenues per annum and employs about 40,000 people.

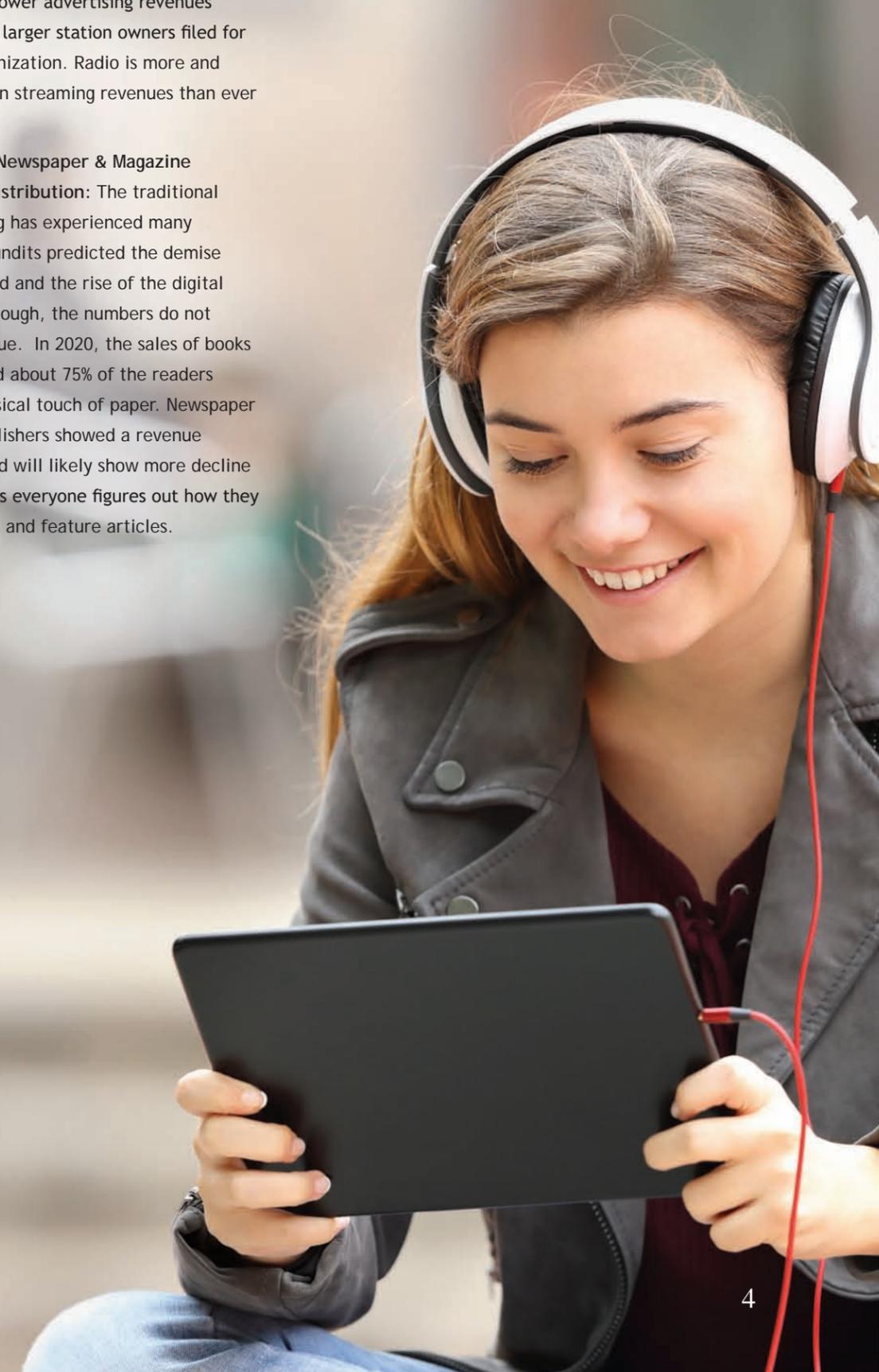
In the sectors of film, television, music, and video gaming, Georgia is an epicenter of creative talent and production prowess and plays a dominant role in the U.S., and in some cases, on the world stage. These four M&E sectors generate an estimated \$6.6 billion in revenue. Since exact numbers are difficult to get for mostly private companies, Georgia often uses a term called 'economic impact' to measure not only the revenue generated by each company, but tangential revenue. Economic impact is the shared benefit an ecosystem gets from the money flowing through the economy measured by factors such as contractor and supplier wages, external production services, travel, lodging, entertainment, etc. Using economic impact as a measure of performance, Georgia has benefited greatly from M&E.

Here is a quick summary of each M&E sector:

- **Film & Video Production & Distribution:** The first half of 2020 saw revenues down by 80% as movie theaters closed and people tried to figure out how to live through the pandemic. The second half of the year saw production house doors open and filming continue. The business savior for the film industry was streaming. As folks stayed at home, streaming became the best way to get entertainment on demand. Projections for this sector are good with an anticipated growth of 3.6% in 2021.
- **Television Production & Broadcasting:** Even though viewership grew by 8.3 million, television experienced a revenue downturn of 15% in 2020 mostly due to a loss of advertising dollars, again fallout from the pandemic. Streaming video helped balance the losses with growth from the big four streaming platforms. Georgia TV ad revenues also saw a revenue spike from the 2020 elections.
- **Video Games and eSports Production & Distribution:** Global video game revenues grew by 20% due in large part to the pandemic's stay at home requirement. Analysts anticipate that growth will settle down though in the coming years. eSports, on the other hand, has shown excellent growth potential and since gamers can meet online, future revenues look very positive.
- **Music Production & Distribution:** The global music industry revenues grew by 7.3% with the largest percentage growth coming from streaming (about 20%). Most of the other revenue indicators such as downloads, and performance rights dropped due to the pandemic malaise. Georgia generated about \$469 million in 2020.
- **Radio Production & Broadcasting:** TAG estimates that the radio industry in Georgia generated \$477 million in annual revenue. During 2020, the radio

industry suffered lower advertising revenues and several of the larger station owners filed for Chapter 11 reorganization. Radio is more and more dependent on streaming revenues than ever before.

- **Publishing Book, Newspaper & Magazine Production and Distribution:** The traditional world of publishing has experienced many doubters as the pundits predicted the demise of the printed word and the rise of the digital medium. Funny enough, the numbers do not show that to be true. In 2020, the sales of books increased 8.2% and about 75% of the readers preferred the physical touch of paper. Newspaper and magazine publishers showed a revenue decline in 2020 and will likely show more decline in years to come as everyone figures out how they want to read news and feature articles.



C MEDIA & ENTERTAINMENT INDUSTRY OVERVIEW - DIVERSE AND DYNAMIC

The Media & Entertainment (M&E) industry is made up of multiple sub-sectors that contribute to making it a highly diverse and dynamic industry. It is truly a global industry reaching a significant portion of the world's population. For the purposes of this Ecosystem Report, we will focus on six M&E sub-sectors, as well as the ever-important telecommunications sector which provides the backbone and delivery platform for many of M&E's creative products and services.

1. Film & Video Production & Distribution
2. Television Production & Broadcasting
3. Video Gaming and eSports Production & Distribution
4. Music Production & Distribution
5. Radio Production & Broadcasting
6. Publishing - Book, Newspaper & Magazine Production & Distribution

According to the PricewaterhouseCoopers (PwC) Global Entertainment & Media Outlook 2020-2024,

M&E *global revenues* were \$2.0 trillion in 2020. Global revenues are expected to grow to \$2.1 trillion in 2021. With an estimated 2.8% compound annual growth rate (CAGR) through 2024, M&E revenues should reach \$2.5 trillion in 2024 according to the report.

The *United States* M&E market is the largest market in the world. In 2020, M&E revenues for the U.S. exceeded \$500 billion and is projected to grow by a CAGR of about 6% through the end of the decade.

Georgia has grown into one of the top M&E hubs in the world, joining other business hot spots around the globe. Georgia is home to more than 700 M&E companies. The six subsectors we are focusing on generate an estimated \$14.7 billion per year in revenues and support an estimated 40,000 employees who help drive creative and production processes. You will find a list of the 700+ Georgia-based M&E companies at the end of the Ecosystem Report.



Table 1: Summary of Georgia Media & Entertainment Ecosystem

Media & Entertainment Market Segment	Estimated Number of GA M&E Companies ¹	Number of GA M&E Spotlighted ²	USA Total Estimated Market Size by M&E Segment	GA estimated Percent of National Revenue ³	Estimated GA Annual Segment Revenue ³	Estimated Number of GA-Based Employees ⁴
Video, Movie, & Documentary Production	609	124	\$85 bil	3.43%	\$2.9 bil	16,000-16,500
Television Production & Broadcasting	119	50	\$63 bil	3.86%	\$2.4 bil	10,500-11,000
Video Games & eSports - Production	412	141	\$90 bil	0.9%	\$801 mil	4,500-5,000
Music - Major & Indie Labels, Publishing	131	107	\$12 bil	3.86%	\$469 mil	350-500
Radio Broadcasting	168	100	\$17 bil	2.81%	\$477 mil	1,500-2,000
Publishing - Books, Newspapers, & Magazines	396	191	\$303 bil	2.50%	\$7.6 bil	6,000-6,5000
TOTAL	1,835	731	\$507 bil	NA	\$14.7 bil	38,850-41,500

1. Using the U.S. tables, TAG Research discovered over 1,800 M&E companies in GA.
2. TAG Research identified 713 companies by name to use for the Ecosystem Report.
3. To calculate GA revenue by sector, TAG Research used the Bureau of Economic Analysis figures to estimate the percent of U.S. revenue for the sector. In the M&E markets, GA's percent averages 2.5%-to-4%, except for Video Games and eSports.
4. These numbers are for direct employees to the M&E companies and does not refer to contractors. Bureau of Labor & Statistics May 2020 Workforce analysis.

"Atlanta is fast becoming a hub for digital media and entertainment. Atlanta ranks in the top 10 for best cities for gamers, best place to work and live as a moviemaker, gamer and developer opportunities, tech employment growth and more."

Georgia Power's Community & Economic Development

Over the last several decades, Georgia has earned a leading role in the U.S. M&E industry. This dynamic role is based on the hard work of very creative minds and the innovative use of technology. To attract the talent and funding needed to build a center of excellence, Georgia has offered attractive tax incentives to bring business to the state. For example, over the last ten years, Georgia has dispensed more than \$4 billion in film tax credits to draw creative talent and production experts to the state. "Most states, including New York and California, cap their

tax credits. Georgia has no cap, which is partly why so many big-budget films are willing to shoot here." (Atlanta Journal-Constitution, 2019)

TAG research, relying on a wide range of industry data, has provided estimates on key metrics that help define the ecosystem. Table 1 provides an overview of the six M&E market segments in Georgia measuring the number of companies, our estimated revenue by sector, and an estimate of the number of employees throughout the state. We have selected 713 companies in our spotlight, even though our research shows more than 1,800 M&E related companies. We believe the companies selected are the primary revenue producers in the state and represent a very good profile of the M&E ecosystem. At the end of this Report, we list the 713 M&E companies broken down by their specialties.

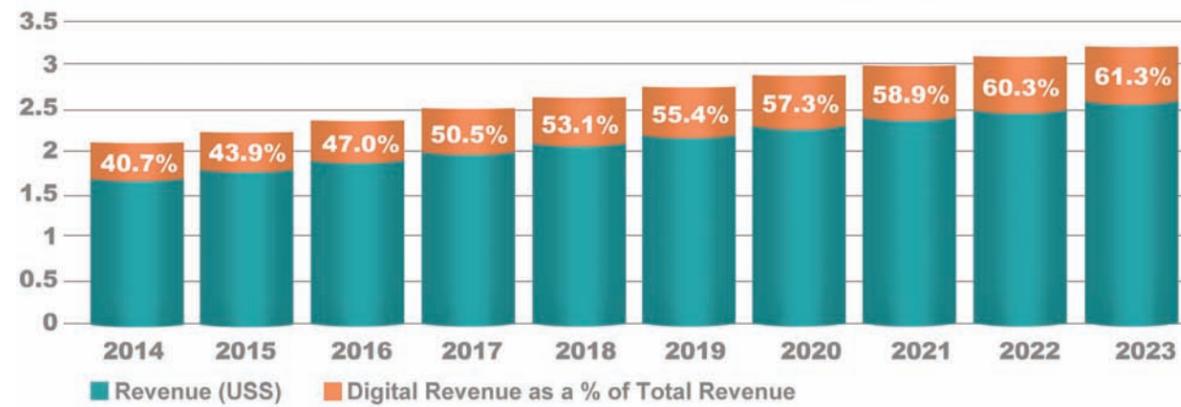
COVID-19 Pandemic Slows M&E Growth in 2020, But Not Down the Road

Like many industries, the COVID-19 pandemic slowed the formerly healthy and consistent growth of the M&E industry globally. The disruptions of 2020 were the first signs of ecosystem contraction in most segments of this diverse and storied industry. But, while the global economy suffered greatly because of the pandemic, the shelter-in-place and social distancing requirements helped accelerate consumer and business demand for M&E products and services, as well as highspeed internet access and shared communication services. Here are some examples of

- While publishing experienced a downturn in early 2020, it rebounded in the second half as consumers turned to printed and electronic books, magazines, and newspapers to entertain themselves.

M&E will continue to feel the economic pinch of the pandemic for some time. But the general outlook is quite positive. According to PwC’s Perspectives from the Global Entertainment & Media Outlook 2020-2024, the worldwide M&E industry is expected to post a 2.8% compound annual growth rate (CAGR) through 2024 (see Graph 1). Please note that within this growth outlook, not all M&E companies will rise with the

Graph 1: Global E&M Revenue Growth Through 2023



Source: PwC Global Entertainment & Media Outlook 2019-2023

the ups and downs across the U.S. that are equally applicable to Georgia:

- While in-theater movie traffic fell dramatically, on-demand subscription service revenues grew and are projected to remain strong.
- While sports arenas saw games played with few to no spectators, online streaming of sporting events and esports platforms did remarkably well.

tide - some sectors will rise while others will fall (often called the K-shaped bifurcated recovery).

As we will see throughout the report, more and more consumers are taking control of their own media and entertainment consumption in a world of ever-expanding choice. One key observation is that the impact and aftereffects of COVID-19 have shortened the adoption cycle of key technology innovations in the Media & Entertainment industry.

D MEDIA & ENTERTAINMENT - SIX KEY SECTORS UNDER TAG'S REVIEW

To help understand the microeconomy of the Georgia Media & Entertainment business sectors, we have taken a close look at six subsectors. For each, we will look at the global, the U.S., and the state of Georgia revenues to define our local ecosystem to the best of our ability. To gather the data, we relied on public information available to us on the internet and other resources we have at hand. As you probably know, finding consistent data across all research groups is next to impossible because the compilation of that data is arranged differently by each research organization.

Below is a look at the six M&E subsectors. Please note that a listing of the spotlighted M&E companies by sector is on pages 35-38.



Video on Demand



7 FILM PRODUCTION AND DISTRIBUTION - PANDEMIC SPURS FOCUS ON STREAMING

Movies & Videos

Number of Georgia Companies Spotlighted	U.S. Sector Revenue	Georgia Estimated Revenue	Georgia Estimated Employees
124	\$85 bil	\$2.9 bil	16K

Video entertainment, for this 2021 TAG Ecosystem Report, includes motion pictures, documentaries, and the preproduction, production and postproduction disciplines, as well as the multiple distribution mediums that deliver this content to audiences around the world. Please note that because of its size and importance within the M&E industry, we have dedicated a separate section (Section 2) to the television subsector.

Prior to 2020, the **global film industry** anticipated healthy revenue projections for the future, with worldwide box office revenue growing consistently for years and amounting to more than \$42 billion in 2019. But the pandemic hit the industry hard. According to media and tech research company Omdia, the global film industry lost an estimated \$32 billion in 2020, a 71.5% reduction in box office revenue compared to 2019. Due to the pandemic, thousands of cinemas across the world have been dark for the better part of 18 months, while those that have reopened are operating at dramatically reduced capacity. Although federal and local governments are loosening

restrictions on public events, film industry revenues will take time to bounce back to prior levels.

North American box office revenues struggled as well with 2020 logging \$2.2 billion according to research firm Comscore (a 40-year low). That is down roughly 80 percent from 2019's \$11.4 billion in revenues.

Considering that film revenues across the world have suffered, *Georgia's* performance has been remarkably good. This is due to the robust ecosystem in Georgia that has been built over the past 20 years. While Georgia's film industry did suffer production shutdowns during the first half of 2020 caused by the pandemic, the second half bounced back nicely.

Even with the shutdowns, 234 film productions took place according to a Georgia Department of



Administrative Services (DOAS) press release from June 2020. In fact, in that same press release, Georgia Governor Brian Kemp announced that major motion picture, television, and streaming companies could

Top 10 Video Production Companies in Georgia by Revenue

1. Tyler Perry Studios
2. Trilith (Fmr Pinewood Atlanta Studios)
3. EUE Screen Gems Studios
4. Bento Box Entertainment
5. Stargate Studios
6. Friendly Human
7. Atlanta Metro Studios
8. Blackhall Studios
9. ChaseLight
10. Floyd County Productions

begin to resume production activity in Georgia. As a result, DOAS estimated that 40,000 workers would be returned to work or hired to work on an expected 75 production projects that estimated to invest over \$2 billion into the Georgia economy over the following 18 months.

Even though precise revenues are not reported by most companies, Georgia uses a methodology called "economic impact" as the measure of the success for the Georgia film industry. While economic impact has

varied meanings, it is essentially the shared benefit an ecosystem (Georgia in this case) gets from the money flowing through the economy measured by factors such as wages, production costs, and entertainment from outside sources.

In 2017, Georgia reported an economic impact to the state of \$9.5 billion for film and TV production, among the highest in the country. "During the first quarter of 2021, movies and TV productions filmed in Georgia generated \$101 million in wages for members of the International Alliance of Theatrical Stage Employees," stated Lee Thomas, Deputy Commissioner, Georgia Department of Economic Development. "That's up significantly from the \$74.8 million in wages posted during the first quarter of 2020, and a record first quarter for the industry in Georgia."

Along with the substantial economic benefits, Georgia video entertainment companies have gained impressive industry recognition by earning 50 Emmy Award nominations, thus setting a spirited standard of excellence throughout the industry. Heralding another industry recognition, Governor Kemp announced that Business Facilities Magazine had ranked Georgia as the No.1 Film Production Leader in July 2020.

An important element of Georgia's success in film-related revenues is the very aggressive financial incentives the state has offered to attract new projects. The Georgia Entertainment Industry Investment Act was signed into law in May 2005 and updated in May 2008. The Act grants qualified film

TYLER PERRY STUDIOS - A SIGNIFICANT INVESTMENT YIELDS SIGNIFICANT RETURNS

In 2019, Tyler Perry opened Tyler Perry Studios on a 330-acre property with 12 sound stages. It is now the largest film production studio in the United States. The property was formerly a pre-Civil War muster grounds (temporary Army barracks), and from 1866-2011 was the U.S. Army Fort McPherson. Since then, the facility has been used to shoot multiple big-budget films.

Perry is a prolific creator. He has directed 20 films, which grossed more than a billion dollars worldwide; he has written, directed, and produced eight TV series; and both his books landed on the New York Times best-seller list.



"What we're doing here at Tyler Perry Studios hasn't been done in a hundred years. We're building a major motion picture studio," says Steve Mensch, president and general manager of studio operations at Tyler Perry Studios. "I feel like I'm on the ground with a legend."

productions a transferable income tax credit of 20% of all in-state costs for film and television investments of \$500,000 or more.

An additional 10% tax credit can be awarded to approved projects that embed a Georgia Entertainment Promotional Logo within the titles or credits of each production.



Typical of fast moving, high technology industries, recognition is often short lived in the film industry. The 'what have you done for me lately' syndrome can be pervasive. But measurements of success are always open to the high achievers, and there are many in Georgia. So, in addition to excelling on the creative side, Georgia film executives have had to work hard to adapt quickly to new business models and distribution strategies. Helping consumers find the best entertainment to offset the boredom and

loneliness of the unprecedented stay-at-home world of a pandemic became both a mandate and a huge business opportunity for the film industry.

According to the Motion Picture Association of America, the motion picture and television industry in Georgia is responsible for more than 92,100 jobs and nearly \$4.6 billion in total wages, including indirect jobs and wages.

Ample investments in integrated technologies are an important measurement for film makers to create films that the public yearns to see.

And during the last few years, there has been an abundance of new technology to create the sizzle that attracts audiences. Computer Generated Imagery (CGI), introduced in 1973 and used commercially in the early 1980's, is a well-known example of how artists create dynamic and out-of-this-world graphics. Today, technologies such as artificial intelligence (AI), augmented reality (AR), dual camera virtual reality, and drones have opened the doors and minds of producers to expand the imagination.

Another technology that has greatly impacted the film industry is streaming media. Streaming is now at

the top of every film industry executive's distribution strategy. And competition is fierce. Today, there are more than 200 streaming services in the U.S. and no two are alike. Streaming revenues are estimated to be \$24.1 billion the United States in 2020, up from \$18.8 billion in 2019, according to BusinessofApps.com. By 2024, the firm estimates streaming revenues will reach \$38 billion. With 75 million subscribers, Netflix leads the pack followed by Amazon Prime Video with 50 million subscribers, and Disney+ with 45 million subscribers. The top 10 video streaming companies have a subscriber base of over 300 million viewers. And on average, individuals subscribe to four streaming services in the U.S. and spend an estimated \$47 per month.

Movie studios and distributors have taken a direct hit from the pandemic. In response, they now have an opportunity to revamp the business models of a time-honored tradition to better meet the demands of the digital world.

Digital Media Trends - Deloitte Insights - December 2020

Online video usage also experienced strong growth in 2020 - both transactional (one purchase at a time) and through monthly subscriptions. According to Omdia, online transactional and subscription video revenue was \$34 billion in 2020. Omdia also reports that video on demand (VOD) accounted for \$630 million in studio revenues during the same period.

What's ahead for the Georgia film industry? TAG believes a combination of expertise and talent that exists in Georgia will continue to drive films revenues higher. Georgia has an excellent track record of success in handling both the creative and production requirements of the film industry. Over the past decade, hundreds of films have been shot and produced in Georgia. In the U.S., Georgia, California and Louisiana continue to lead as favored locations to film movies. Georgia's advantages of attractive tax incentives, lower cost of living, easy access through Hartsfield-Jackson Airport, and its warm, friendly, and energetic citizens makes it hard to pass up.

BUDGETING AND STAFFING A FILM

According to the Georgia Department of Economic Development:

- There are more than 5,000 individual technicians and other film workers in Georgia (Atlanta).
- The average number of local employees on a medium budget feature film is between 150-175.
- On a larger budget production, there are about 200-250 local employees.
- The average feature film budget is \$41.7 million.
- The average amount (below-the-line) of feature film budget spent in-state is 60% - 70% higher for locally produced projects.

GEORGIA FILM PRODUCTION INCENTIVE PROGRAMS

Georgia offers one of the most competitive production incentive programs for qualifying projects in feature films, television series, commercials, music videos, animation, and game development.

- 20% base tax credit, plus 10% if the qualified production activities include a Georgia promotional logo in credits.
- No limits or caps in Georgia spend and no sunset clause (\$500,000 minimum spend to qualify).
- Postproduction of Georgia filmed movies and television projects qualify if completed in Georgia. Original music scoring eligible for projects produced in Georgia.

Georgia Film Tax Credits Growth FY 2007-2018 Direct Spending



SCAD PLANS TO EXPAND FILM AND DIGITAL MEDIA STUDIO

The Savannah College of Art and Design (SCAD) says it plans an expansion of its film and digital media studio that will make it the largest college movie studio in the U.S.

SCAD says its Savannah Film Studios will include a 10.9-acre backlot, a new digital stage and three new soundstages. The first stage of the expansion will open in the fall of 2021, with the backlot completed by 2023. The project will also include a building for set design and costume design and classroom space.

Video Entertainment Technology - Enhancing the Viewing Experience

Here are some of the technologies that enable film production companies to dazzle their audience.

- CGI - Computer-Generated Imagery is the use of computer software to create three-dimensional images, both static and dynamic, for the partial or entire production of a scene or complete film. CGI is the newest component of VFX, the digital creation of visuals in post-production that cannot be live action.
- 4K and 3D Technology - adds dimensionality to the viewers experience. 3D is used mostly for movie watching while 4K provides higher definition video for TV watching.
- Dual Camera VR - binocular 360 degree viewing and recording.
- Autonomous Drones - sentient drones with built-in knowledge and algorithms for filmmaking techniques (shot sizes, viewing angles, and screen positioning), corrective obstacle avoidance and open-source technology for developing the drone cinematographers of the future.
- Algorithm Editing - uses the variables existing in a piece of footage, such as pixel variation and audio deviations, to determine programmatically where to make cuts and how to reconfigure footage.
- Artificial Emotional Intelligence - the entertainment industry is using human emotions for predicting what type of content will bring a strong emotional reaction for the viewers. Owing to the availability of data in abundance and the advancement in natural language processing, this will result in higher viewer engagement and a personalized way of consuming media in several forms.

2 TELEVISION PRODUCTION AND DISTRIBUTION - VIEWERSHIP GROWS AS PANDEMIC-WEARY FAMILIES SEEK ENTERTAINMENT

Television Broadcasting

Number of Georgia Companies	U.S. Sector Revenue	Georgia Estimated Revenue	Georgia Estimated Employees
50	\$63 bil	\$2.4 bil	10.5K

Television has for many years provided family-centric entertainment that is always available with a push of a remote. Like the film and movie industry, the television sector has been impacted by the pandemic. According to a report from eMarketer, as reported to the Washington Post, the number of U.S. television viewers grew by 8.3 million in 2020, reversing a nine-year slide. But due to the pandemic television broadcast company 2020 revenues dropped by around 15% to an estimated \$141 billion according to research firm Statista.

Television viewers today have a wide range of options sourced from a wide range of providers and delivered on a mix of mediums. Programming and content distribution has become the all-important broadcasting element. Broadcasters want to know whether a consumer chooses to watch a program on a mobile phone, a tablet, or via connected TV (CTV) so they can configure the right mix of ads to fit the medium and the demographic. Ultimately though, what is most important to programmers and distributors is whether the content is drawing the right audience.

Why? Ad revenue is all-important to the program distributors. eMarketer reported that TV ad spend amounted to \$60 billion in the U.S in 2020, a 15% drop from 2019 amidst the pandemic. Television ad spending is forecast to rebound to \$68 billion by 2023. (See Graph 2).

Television continues to be one of the most popular and effective advertising channels. "Despite the ongoing digitalization of the advertising industry and the proliferation of online video streaming services, marketers are still embracing the potential of (linear) television for brand promotion," says Statista. "In the United States, the leading advertising market worldwide, television ranks as the second most profitable advertising medium behind the internet and accounts for approximately 25 percent of total U.S. media ad revenue."

U.S. digital display advertising spending experienced some significant changes in 2020 as advertisers transitioned from traditional mediums to digital formats. According to eMarketer, while ad spending on delivery platforms favored mobile devices, CTV showed the greatest increase in digital ad spending logging a 25% gain in 2020. Whether this trend continues once the pandemic is behind us remains to be seen. Mobile ad revenues are estimated to be \$3.4 billion in 2020 and CTV is estimated to be \$1.6 billion. Calculated by format, video led the way commanding \$3.6 billion in digital ad revenue, showing an 11% increase. See Graph 3 for more details.

Graph 2: How Has the US TV Ad Spending Forecast Changed?



A CNBC report states, "the pandemic has been a boon for the streaming video sector, benefiting players like Roku and ad tech player The Trade Desk. eMarketer projected U.S. CTV ad spend was \$8.11 billion in 2020 and will reach \$18.3 billion by 2024. But even though viewing has been skyrocketing, eMarketer says most of people's streaming time happens in an ad-free way on platforms like Netflix, Disney+ and Amazon Prime Video."

"The big four streaming platforms—Netflix, Amazon Prime Video, Hulu and Disney+—all had at least a three-point growth during 2020 in terms of percentage of consumers that say they subscribe to the service," according to TV Tech's Michael Balderston. "Hulu saw the biggest growth (25% to 33%), followed by Amazon Prime Video (38% to 44%). Netflix and Disney both saw a three-percentage point growth—from 60% to 63% for Netflix, and 29% to 32% for Disney."

Revenue in the Video-on-Demand segment is projected to reach US\$36 billion in 2021. The annual growth rate (CAGR 2021-2025) is estimated to be 8.81%, resulting in a projected market volume of US\$50.5 billion by 2025.

(Statista 2021)

As viewership shifts, so do ad dollars. Neal Mohan, YouTube's Chief Product Officer said in the past year there have been "lightbulb" moments for advertisers and media buyers about how media consumption was shifting, since "they were experiencing that in their own lives."

YouTube says viewers of its own platform are increasingly watching on their connected televisions. 120 million people watched YouTube or YouTube TV on their TV screens in December 2020 as they were spending more time at home. Mohan told CNBC that that figure is up from 100 million in March of 2020. YouTube also said that mobile still makes up the largest percentage of how content is consumed on the platform. But it said in December 2020 that over 25 percent of logged-in YouTube viewers watched content almost exclusively on a TV screen.

Graph 3: Which Segments Are Driving US Digital Display Ad Spending Growth in 2020? billions and % change

Format	Incremental digital display ad spending	% change
Video	\$3.59	11.3%
Native*	\$2.18	4.8%
Banners and other	\$0.26	0.8%
Nonvideo rich media	\$0.11	2.0%
Sponsorship	\$0.06	-2.0%
Device		
Mobile	\$3.39	6.8%
Connected TV	\$1.61	25.2%
Desktop/laptop	-\$1.10	-7.5%
Transaction method		
Programmatic	\$3.72	6.2%
Nonprogrammatic	\$0.18	1.6%
Total	\$3.90	5.5%

Note: category breakouts may overlap; read as sponsorship ad spending will decrease by \$0.06 billion and digital video ad spending will increase by \$3.59 billion in 2020; *includes various native formats, including video and nonvideo ads

Source: eMarketer, August 2020

www.eMarketer.com

Programming executives across the television industry believe they have a more authentic connection with consumers today through streaming media. Creators can develop programming that is more tailored to





audience needs. For example, according to a Nielsen report provided exclusively to USA TODAY, “although overall comedy viewing on TV dropped 9% in 2020, the audience grew substantially for a variety of long-gone sitcoms, from 1960s such as the CBS series “The Andy Griffith Show,” or NBC’s “Friends.” And classic comedies that reflect casting diversity were among the biggest gainers.”

“While the comedy genre is always popular, comedy viewing over the past year highlights a resurgence of nostalgia programming,” the Nielsen report says. “When audiences needed a break from reality, they traveled back in time to tried-and-true picks like Friends, Family Matters, The Golden Girls and Two and a Half Men. Embracing the comfort of the familiar makes sense during an especially unpredictable and troubling year that included the pandemic; protests seeking racial justice after police killings of Black

people; and a divisive presidential election. Programs born when TV content was tamer and aimed at the broadest audience possible may also seem like a reliable option for multi-generational households watching together.”

The expected revenue changes forecasted between 2019 and 2024 show how streaming services are impacting the TV broadcast revenue flow and how programmers (e.g., Fox, ESPN, CBS) must adapt. The Georgia Film Office reports at least 60 television pilots, series, and reality shows are currently in production. Popular television shows like Ozark, Stranger Things, The Walking Dead, MacGyver, and The Resident are currently filming in neighborhoods throughout metro Atlanta. Here is a sampling of some additional television programs being filmed in Georgia:

- **TV Series:** Doom Patrol (Season 3), Dynasty (S4), First Kill (S1), Memories, She Hulk, Sweet Magnolias (S2), The First Lady, and The Staircase.
- **Reality Shows:** Dish Nation (Season 9), First 48, Homegrown (S2), Love & Hip Hop Atlanta (S10), Property Profit (S1), Rhodes to the Top, and Welcome to Plathville (S3).

In Georgia, there are 26 commercial television stations broadcasting from the major local markets of Albany, Atlanta, Augusta, Columbus, and Macon. An additional 10 stations also comprise the Public Broadcasting Network (PBS) network.

Georgia is ranked as the 7th largest television market in the U.S. reaching 2.6 million viewers, just behind San Francisco/San Jose/ Oakland (6th) with 2.7 million viewers, and Dallas/Fort Worth (5th) with 3.0 million viewers. The largest media markets are New York with 7.5 million viewers and Los Angeles with 5.7 million viewers. (Source: Wikipedia)

As we saw with video entertainment in Section 1, states often measure the relative size of a market by its economic impact to the state. Based on a 2019 Woods & Poole Economics report (see Table 3), local television broadcasting in Georgia enjoyed over \$20 billion in economic impact across the state which is about 3% of the U.S.’s total of economic impact of \$700 billion. And in terms of economic impact from employment,

Table 3: Economic Impact of TV – U.S. and Georgia – 2018

Television Broadcasting	Total Economic Impact-U.S. (2018)	Local Economic Impact-Georgia (2018)	Employment Impact-U.S. (2018)	Employment Impact-Georgia (2018)
	\$695.80 bil	\$20.59 bil	1.46 mil	44,260

the report indicates that over 44,000 Georgia citizens of diverse disciplines and industries received a positive influence from the television industry. Source: 2019 Woods & Poole Economics, Local Radio and TV: Helping Drive the United States Economy.

One of the many unique things about 2020 (excluding the pandemic) was that it was an election year, and

Graph 5: Political TV Advertising in Georgia During 2016, 2018, and 2020
TV political advertising revenue for public broadcasting companies (\$M)



elections mean advertising revenue for TV stations. In addition to the ad dollars spent during the election year for both the national and state/local races, Georgia benefited greatly from the national Senate runoffs in early January 2021 resulting in about \$485 million in television advertising. Graph 5 illustrates how strong the TV advertising spend was during 2020 compared to 2016 and 2018 (midterms) across five of the largest TV station owners. TV remains the principal means by which candidates and parties disseminate their messages.

Georgia producers and broadcasters will continue to innovate using many of the same technologies outlined in Section 1. Adapting to the profitable use of these technologies will be the challenge Georgia television executives face.

COX MEDIA HELPS MORTGAGE COMPANIES FIND RELEVANT LEADS

With a strong housing market predicted for 2021, mortgage companies are eager to drive referrals from potential homebuyers as they seek out financing for their home purchase. But the battle for local market share has only grown more competitive as online lending options have crowded into these markets, leaning on strong digital ad strategies to gain a foothold with local buyers.

To meet the needs of a Southwestern mortgage company, Cox Media developed a full-market penetration campaign that utilized both linear TV advertising and video-on-demand to reach consumers. As the only cable TV provider in this area, Cox Media was able to use its cable TV and VOD services to reach specific ZIP codes prioritized by the clients. The local mortgage company saw a strong increase in traffic to its website, as well as an increase in phone calls and online form submissions from consumers interested in a new home loan or home loan refinancing. The client also achieved an average of 21,880 ad impressions per month and an increased volume of home loan closings for the business.

NEW FILM STUDIO CREATED FROM OLD GM PLANT IN ATLANTA



Gray Television is in the final stages of purchasing the remaining undeveloped property, roughly 128 acres, to construct at least 10 film studios along with a focus

on e-gaming, digital media, and robotics, all of which will be dubbed “Studio City.” It is the first phase of the company’s plan for the former GM site, which also includes apartments, townhomes, a hotel, corporate offices, restaurants, and retail space.

Gray owns TV stations in about 100 U.S. markets, which reach roughly a quarter of American households. Gray will inherit up to \$1.5 billion in bonds that Atlanta’s economic development authority agreed to issue to help finance the work.

WHAT IS NEXTGEN TV?

NextGen TV (AKA the ATSC 3.0 standard) is the latest version of over-the-air antenna TV, just like the old days. Like current over-the-air TV broadcasts -- and unlike cable, satellite or live TV streaming -- it is entirely free.

Unlike current broadcasts, NextGen TV can carry high-quality Ultra HD 4K video, HDR and a wide color gamut, high frame rates up to 120Hz, and more. ATSC 3.0 proponents also claim better reception indoors and, on the go, perhaps on the phone or even in the car. And it uses the same standard antennas available today. NextGen TV will be available in Atlanta in mid-2021.

Source: Corporation for Public Broadcasting.

WARNERMEDIA’S FOCUS ON ADDRESSABLE TV

WarnerMedia is building on the company’s leadership position in addressable TV with DIRECTV, now executing thousands of campaigns per year in all 210 DMAs (Designated Market Areas). By the end of the year, WarnerMedia will power the next generation of addressable TV by broadening its enablement to 52 million households, offering the most scaled national footprint with extensions into digital and over-the top (OTT).

Addressable TV allows advertisers to shift from targeting programs to targeting audiences instead, with targeted ads dynamically inserted at the household level through cable, satellite and IP TV delivery systems and set-top boxes. If two households are watching a Knicks game on TNT, for example, one may see an AT&T ad for a new 5G smartphone, while another with young children may see an ad for “Tom & Jerry” on HBO Max. And despite being more expensive than traditional linear TV, addressable advertising is considered more efficient due to the household level reach and frequency control.

3 VIDEO GAMING AND ESPORTS PRODUCTION AND DISTRIBUTION - EXCITEMENT ABOUNDS THROUGH VR/AR

Video Games & eSports

Number of Georgia Companies	U.S. Sector Revenue	Georgia Estimated Revenue	Georgia Estimated Employees
141	\$90 bil	\$801 mil	4,500

Video games mix technology, entertainment, and art to create a wonderful other-worldly experience for users. And one would be hard-pressed to find many other industries that are so dependent on embracing technology with so much vigor. In fact, use of advanced technology is a must to keep pace with this vibrant and very competitive M&E sector. And while the game development cost is significant, the rewards can be worth it.

Video games have been around since the 1980s. By its simplest definition, a video game is interactive digital entertainment that is played using a computer, a smartphone, a tablet, or a sophisticated game console such as Microsoft's Xbox or Sony's PlayStation. Note that the key word here is "interactive." A video game, while it may look like a movie, requires the player(s) to drive

the action, and that requires skill. In fact, the most skilled players can compete on an international stage for money and fame. That is called esports - we will get to that later in this section.

According to a recent report by Newzoo, the *global gaming market* generated an estimated \$159.3 billion in revenue in 2020, representing a 9.3% year-over-year growth rate over 2019. Newzoo projects worldwide video game revenues to surpass \$200 billion by 2023. Worldwide there are an estimated 2.8 billion gamers.

Georgia's Top 10 Video Games Companies by Revenue

1. Scientific Games International
2. AGS
3. SCUF Gaming
4. Technicolor
5. TapJoy
6. Tripwire Interactive
7. Eclipse Gaming
8. Kava (Kaneva)
9. Hi-Rez Studios
10. Pace-O-Matic

The U.S. is the second largest video gaming market in the world with an estimated 150 million gamers generating \$36.92 billion in annual revenues during 2020. China, the largest video game market, has annual revenues of \$40.85 billion and claims 660 million gamers (Statista, Feb 2021). Some simple math shows that revenue per gamer should be much more lucrative in the U.S. In terms of gender, women represented 41% of all players in 2020 and men were 59% of the players.

As reported by AllOnGeorgia, a new study from the Entertainment Software Association (ESA), the video game industry in Georgia generates \$801.4 million in annual economic impact, either through

direct industry output (\$370 million), or via other participants in the video game ecosystem, such as suppliers and other supported output (\$431 million). This ranks the state #13 nationally in economic output for video gaming. Also, the video game industry accounts for about 5,000 jobs in Georgia, either directly through industry jobs (about 2,200), or through supplier and other supported jobs (about 2,800). That ranks the state #11 nationally in terms of jobs supported by the industry. Overall, the U.S. video game industry's annual economic output is \$90.3 billion and accounts for nearly 429,000 jobs.

Georgia's skilled workforce and unrivaled support for the digital gaming industry has helped create more than 12,000 direct and indirect gaming jobs and has generated a \$550 million impact on the state.

Source: Georgia.org



For Georgia game developers, creating a new game can be a large investment. The cost of developing a new AAA video game (top level) ranges between \$60-to-\$80 million. Some games such as Grand Theft Auto V are estimated to have cost close to \$300 million. But the upside can be good. Grand Theft Auto V scored \$1 billion in revenue in 2020. With this level of investment, video game developers need to make the right choices in creative and production talent.

To incentivize gaming development companies, Georgia offers tax incentives on the payment of

income taxes under guidelines established in the Georgia Entertainment Industry Investment Act.

Both Georgia-based and non-Georgia-based companies with limited tax liability can transfer them to a Georgia company if the transferor recoups at least \$.60 on the dollar. Georgia's tax code even qualifies expenditures on editing, animation, coding, special effects, sound, and other costs generated while creating an entertainment product distributed commercially outside of Georgia.

eSports has had a meteoric rise with revenues approaching \$1 billion worldwide, according to Statista. eSports is a public competition for video gamers and often takes the form of organized, multiplayer video game competitions, particularly between professional players, individually or as teams. An esports competition can attract thousands of

in-person viewers at a large venue and include thousands of other viewers watching a streamed version of the competition from around the world.

Well known examples of esports games include "Fortnite," "League of Legends" and "Overwatch." Atlanta even hosts the world's largest digital festival, DreamHack, which attracts over 39,000 players annually. The Atlanta Reign is an international esports team that participates in a league called

the Overwatch League. The League is comprised of 20 city-based teams and offers 24 weeks of competition. Chart 6 illustrates the potential earnings gamers can participate in.

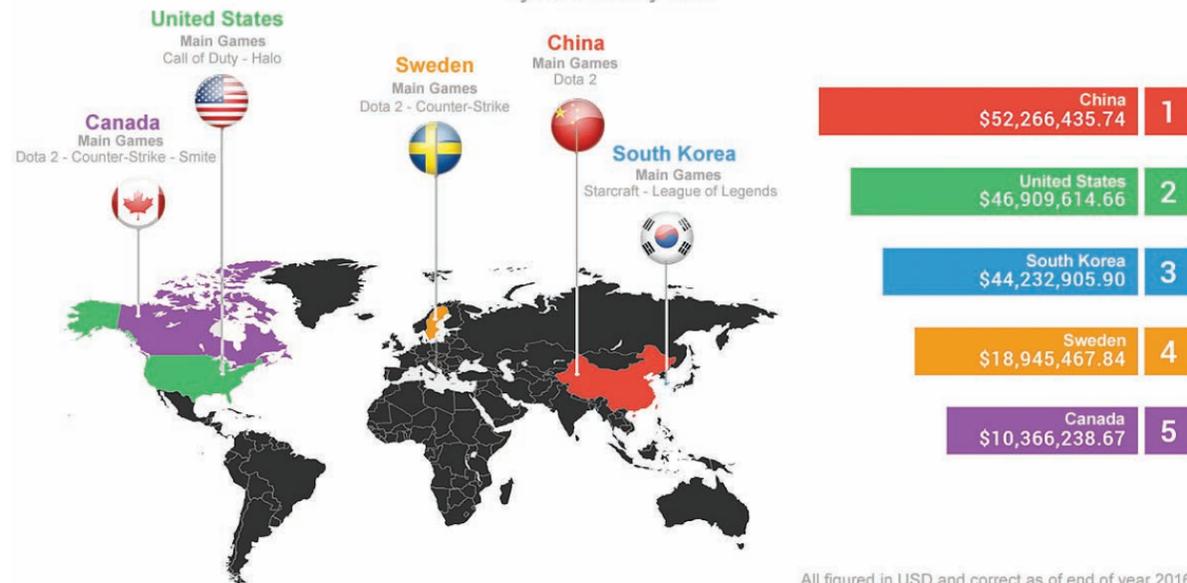
The intense competition of esports has also hit colleges and universities. Georgia State University and Georgia Southern University have fielded varsity esports teams in the last few years, according to the National Association of Collegiate Esports.

As with the film industry, Georgia companies that



Chart 6: eSports Revenue Worldwide

By Prize Money Won



All figured in USD and correct as of end of year 2016

film and stream esports events online are now taking advantage of the state tax credit originally designed mainly for film and TV crews. The credit is worth up to 30 percent of qualified production costs.

The development of games requires a lot of creative talent combined with a lot of very advanced technology. Below is a quick overview of some of the top technologies used in the video gaming industry.

- **Facial Recognition:** 3D scanning and facial recognition enables the game to create your likeness (think custom avatar), or transfer the player's expressions to the system. For example, the Intel RealSense 3D camera can scan 78 different points on a person's face to interpret the player's mood at any point in a game.
- **Voice Recognition:** this technology recognizes players' voice and can enable players to control gameplay, interact with social media, search the web, and interact with the gaming system.
- **Gesture Control:** this technology enables a user to interact with a device with a few hand waves, or even replace the controller.
- **Photo Realistic Texture:** games can now be experienced in fully rendered worlds with photo realistic textures that enhances the playability of the game.
- **High-Definition Displays:** 4K televisions or 4K laptops enhance the vividness and playability of the games for users.
- **Virtual Reality (VR):** VR headsets enable a fully immersive gaming experience.
- **Augmented Reality (AR):** AR games allow for a perspective unique to the gamer. The gamer can maneuver spaces within the real world and make the object of the game applicable to real-life situations.
- **Wearable Gaming:** wearable games make gaming portable without being too invasive. Companies that started by using wearable technology for fitness applications are now planning to incorporate entertainment into the mix as well.
- **Mobile Gaming:** With the advent of smartphones and tablets, the gaming experience has been taken out of the arcade and the living room and put into the palm of your hand.

- **Cloud Gaming:** Games no longer need be limited by the amount of memory that discs or consoles have to offer. Using the cloud opens games up to massive server-size power where images are streamed to your screen through the internet.
- **On-Demand Gaming:** Gamers can already watch and share live-streams of games, but what about playing them? Much like similar movie streaming services, the ability to stream video games is becoming more and more a reality, and it could lead game developers both big and small to compete for gaming glory.



Esports stadiums attract thousands of gamers.

HI-REZ STUDIOS

For four days in January, about 3,000 people descended on the Cobb Energy Performing Arts Centre just north of Atlanta. Most traveled from outside Georgia to watch professional video-game players compete for prestige, bragging rights and prize money in games designed by Hi-Rez Studios, a firm headquartered in Alpharetta that designs multiplayer video games.

A much larger audience — about 5 million people, according to Hi-Rez — watched online. Hi-Rez filmed the games and distributed them online on channels that include Twitch TV, a live streaming platform that focuses mostly on broadcasting video games.

GEORGIA STATE UNIVERSITY'S MEDIA INSTITUTE

The Creative Media Industries Institute (CMII) builds connections between creative students and the entertainment and information industries. It is considered one of the most diverse media institutes in the country, educating the next generation of digital storytellers through emerging technologies including augmented reality, virtual reality, gaming, music, and media entrepreneurship.

CMII opened its doors in 2017 educating approximately 250 students. During the fall of 2021 the institute will be teaching over 800 students. Its faculty is a mix of accomplished academics and successful media entrepreneurs focused on providing students with real world experience and advanced technology workforce training.

U.S. TEENAGER BECOMES FIRST FORTNITE WORLD CUP CHAMPION, WINNING \$3 MIL.



A U.S. teenager who goes by the name Bugha - real name Kyle Giersdorf - became the 2019 Fortnite World Cup Champion. The 16-year-old beat 99 other players in the brightly colored Battle Royale game, running, building, and fighting his way to a \$3m victory. He ended up with almost double the score of the second-place competitor.

The competition began months ago, with waves of qualifiers being selected in weekly online play-ins. A total of 40 million people attempted to qualify for the World Cup, the first esports event of its kind for the mega-hit Fortnite, one of the world's most popular video games. The 100 who made their way to New York represented 30 different countries. There were 16,000 other attendees, with millions more tuning in online. Playing Fortnite is already his career, both as a competitive player in tournaments and as a streamer on Twitch, entertaining his fans daily.

Courtesy of The Guardian

4 MUSIC PRODUCTION AND DISTRIBUTION - A GREAT SOURCE OF INSPIRATION AND ESCAPE IN A PANDEMIC WORLD

Music Publishing & Distribution

Number of Georgia Companies	U.S. Sector Revenue	Georgia Estimated Revenue	Georgia Estimated Employees
107	\$12 bil	\$469 mil	400

The rapid transformation of the music industry (since Napster) is a classic example of how an innovation can disrupt an entire industry and make existing industry competencies obsolete. Of course, Napster was judged illegal, but the power and influence of the pre-internet music industry was largely based on the ability to control physical distribution. The internet makes physical music distribution increasingly irrelevant and the incumbent major music companies have been required to redefine themselves to survive. Music is truly an essential part of everyone's life whether its listening to recorded music, attending a concert, or writing and recording your own scores. Music entertains, invigorates, and soothes the soul of many - especially important during the 2020 pandemic.

The Georgia music community stands tall in the U.S. and around the world. The Georgia music scene has flourished for many years and includes legendary artists such as Ray Charles, James Brown, the Allman Brothers, Tony Braxton, R.E.M., Usher, the B-52s, Outkast, Ludakris, Lil Baby, and many, many others.

Even with the impact of the pandemic, global music sales grew by 7.4% in 2020 according to IFPI's Global Music Report. Not surprisingly, growth was driven by streaming revenues - particularly paid subscription streaming.

Here is a sampling of IFPI's worldwide music industry statistics:

- Streaming: +19.9% -- Streaming revenues grew by 19.9% in 2020 to \$13.4

billion. Paid subscription streaming was the key driver showing 18.5% growth.

- Downloads and other Digital: -15.7% -- Music consumption continued the move from an ownership model to an access model in 2020. Revenues from downloads and other digital fell 15.7%.
- Physical: -4.7% -- Physical revenues (CDs, vinyl, etc.) fell by 4.7 % in 2020 to a total of \$4.2 billion. This was a slower rate of decline than the previous year (5.3% in 2019).
- Performance Rights: -10.1% -- Revenues from performance rights (use of recorded music by broadcasters and public venues) declined by 10.1% in 2020 as the COVID-19 pandemic impacted public performance revenues, interrupting more than a decade of continuous growth in this sector.
- Synchronization: -9.4% -- Revenues from synchronization (the use of music in advertising, film, games, and TV) declined by 9.4% in 2020 due to production delays from pandemic restrictions after growth in 2019 of 4.4%.

Revenue growth was driven by streaming revenues - particularly paid subscription streaming - which more than compensated for declines in revenues across other formats.

(Source IFPI, 2021 Global Music Report)



The U.S. music market grew by 7.3% in 2020. Streaming revenues were up by 12.9%, driven by an increase in subscription revenues of 13.4%. The U.S. provided a greater contribution to global revenue growth than any other country. In 2019, the U.S.

recorded music industry (including concerts and touring) grew to \$22 billion.

Georgia-based music organizations generated an estimated \$3.8 billion in economic impact in 2020, employed more than 20,000 professionals, and

generated an estimated \$313 million in annual tax revenues for the state. As noted earlier, economic impact is essentially the shared benefit an ecosystem (Georgia in this case) gets from the money flowing through the economy measured by factors such as wages, production costs, entertainment, etc.

In January 2018, the Georgia General Assembly passed the Georgia Music Investment Act which provides tax

Georgia's Top 10 Music Studios by Revenue

1. 11th Street Studios
2. Nash Vegas Studio, LLC
3. Patchwerk Studios
4. Green Machine Studios L.L.C.
5. Soul Asylum Studios
6. Tree Sound Studios
7. DBC Recording Studio
8. Spotlight Sound Studio
9. Captive Sound
10. Elevated Basement Studio

incentives to music industry organizations. The Act provides a tax credit of up to 15 percent of a company's qualified expenses in Georgia related to musical production and performance - and up to 20% for expenditures in certain counties designated as economically distressed.



GEORGIA TECH CENTER FOR MUSIC TECHNOLOGY

What possesses someone to invent a new instrument? Ask the finalists of this year's Guthman Musical Instrument Competition (sponsored by Georgia Tech), and you get different answers — among them boredom, curiosity, frustration.

First place in the recent Guthman competition is the Segulharpa. Created by Ulfur Hansson from Iceland, the Segulharpa is new and unique among electro-acoustic instruments. This large circular walnut instrument holds 25 steel strings, which are “bowed” by powerful magnetic fields. Touch sensors are embedded into the grain of the wood, and as the player touches the surface wonderfully complex interactions are created inside.

The Georgia Tech Center for Music Technology (GTCMT) is an international center for creative and technological research in music, focusing on the development and deployment of innovative musical technologies. GTCMT's vision is twofold: to transform the ways in which we create and experience music, and to create the next generation of technology for musical composition, performance, consumption, and education.

Source: New York Times, March 2021



Digital technologies have helped revolutionize the music industry by creating high quality, low-cost recording technologies and digital distribution, along with the proliferation of devices to download and listen to music. Today, music fans want to be able to customize the music they listen to and skip the

“The universe of opportunities for artists and labels is diverse, vast, and fast expanding. There’s strong growth in both subscription and ad-supported streaming, with plenty of runway around the globe. At the same time, the pandemic has accelerated consumer adoption in areas like gaming, live streaming, social media, and in-home fitness.”

“Music is a fundamental driving force in the success of these platforms, and we are at the forefront of inventing exciting new creative and commercial possibilities.”

STEVE COOPER, CEO, Warner Music Group

music they do not like. While augmented reality (AR), artificial intelligence (AI), and virtual reality (VR) technologies are continuing to evolve across the music industry, their potential for personalized listening experiences for fans is immense.

Below are some of the advanced technologies music producers use to make their product unique.

- **Artificial Intelligence (AI)** - AI can analyze data from different compositions to create new musical scores. Through reinforcement learning, the algorithm learns what characteristics and patterns create music that is enjoyable or that mimics a certain genre.
- **Virtual Reality (VR)** - The potential for VR to completely change the way music is both consumed and created is enormous. By simulating intense concert environments, or placing users in a recording studio, VR can provide someone with a fully immersive music experience from their living room.

- **Augmented Reality (AR)** - Using AR alongside object identification technology can increase audience engagement or allow people who currently have an AR app to scan their surroundings and make special effects appear on their mobile device before, after, and during the show.
- **Machine Learning (ML)** - ML technology in music production can “listen” to humans playing instruments and improvise to create music patterns that humans might not create on their own.
- **Social Media Platforms** - social media has vast reach across billions of users and can enable artists to get real-time feedback from their fans to improve marketing strategies and create a true brand partnership connection.

“There are more than 50 post-secondary education programs in music-related disciplines at Georgia State University, the University of Georgia, Kennesaw State University, CEC, Clayton State University, and Georgia Institute of Technology.”

As we look forward, the music industry will continue to thrive, and new technologies will help provide a more unique experience. The all-important music consumer will have more power to influence digital entertainment industries than ever before. Streaming services, for example, can engage consumers directly and tailor music listening to meet personal tastes and moods. More diversified music services will also enable organizations to capitalize on vertical business opportunities, license brand name products and services, package consumer experiences around touring and live music, bundle music services with other online content services, and so much more.

ROBLOX USES VR TO CREATE UNIQUE VIEWING EXPERIENCE



More than a million people showed up to an album launch party inside the virtual world of Roblox. American pop star Ava Max held a “virtual fan meetup” in the game to celebrate the launch of her new album Heaven & Hell. It was a relatively simple affair.

Despite its straightforward nature, 1.16 million unique players showed up for the event, with a peak concurrent total of 166,620 people — and it is just the start of a plan to make music an integral part of Roblox.

TRAVIS SCOTT USES FORTNITE TO WOW AUDIENCES



Hip-hop artist Travis Scott maximized Fortnite's virtual reality platform to deliver an other-worldly performance reaching 27.7 million unique viewers/players. According to Forbes, the concert grossed about \$20 million including merchandise sales.

Fortnite is a free-to-play video game set in a post-apocalyptic, zombie-infested world. This free-to-play business model set Fortnite apart from its peers and has proven to be one of the reasons for its success. Revenues for 2020 is forecast to be \$5 billion.

5 RADIO PRODUCTION AND BROADCASTING - INDUSTRY EMBRACES DIGITAL TECHNOLOGY TO MAINTAIN AUDIENCES

Radio Broadcasting

Number of Georgia Companies	U.S. Sector Revenue	Georgia Estimated Revenue	Georgia Estimated Employees
100	\$17 bil	\$477 mil	1,500

Traditional radio stations are one of the M&E sectors that have done a good job of embracing digital delivery platforms such as internet radio and streaming services to hang on to existing customers. Internet radio services, as opposed to traditional transmission via radio waves, are rapidly increasing in popularity because they offer a combination of better sound quality, interactive music search tools, and genre-specific channels to listeners online.

The global radio broadcasting market is expected to grow from \$100 billion in 2020 to \$113.59 billion in 2021 at a compound annual growth rate (CAGR) of 13.6%. The market is expected to reach \$137.72 billion in 2025 at a CAGR of 5%. (Source: The Business Research Company)

Western Europe was the largest region in the global radio broadcasting market, accounting for 50% of the market in 2020. North America was the second largest region accounting for 28% of the global market.

U.S. Radio Market Profile:

- Market Size: \$17 Billion
- Number of Businesses: 5,000
- Industry Employment: 74,000

As more Americans opted, or were required to stay home over the past 12 months amid growing concerns about the pandemic, radio consumption has grown. A recent Nielsen survey found that 83% of consumers say they are listening to as much or more radio as they were before the pandemic. An estimated 18% of heavy radio listeners in the U.S. noted they will be listening to more radio because of the coronavirus outbreak, and 79% said that they would continue to listen at the same level.

Radio stations, not unsurprisingly, were impacted most by the loss of the commuter audience which the pandemic impacted in a big way. According to a recent survey by Strategy Analytics, the pandemic has

resulted in a decline in AM/FM car radio listening because workers are commuting much less. "Year over year, interest in radio has steadily lost ground relative to other sources like streaming or brought-in digital media. But what is clear is that after years of dominance traditional radio has reached a turning point as streaming media is the

BIA's Radio Station Revenue Estimates 2016-2022 (\$B)

"Radio's shining star continues to be digital ad revenue, which will grow back to over \$1B again in 2021 after a slight fall last year. Digital will also outpace over-the-air growth going forward."

Mark Fratrick, Chief Economist and SVP
BIA Advisory Services



Source: NIA's 1st Quarter Investing In Radio® Market Report 2021

NPR ADAPTS TO DOWNTURN OF COMMUTER LISTENERS

Since the pandemic took hold in the United States, NPR's radio ratings have taken a nosedive. Half of AM/FM listening in the United States takes place in a car, but between reduced (or eliminated) commutes and social distancing, there's been a steep decline in the drivers that make up public radio's traditional broadcast audience.

"People who listened to NPR shows on the radio at home before the pandemic by and large still do," said NPR's media correspondent, David Folkenflik. "But many of those who listened on their commute have not rejoined from home. And that threatens to alter the terrain for NPR for years to come."

The dip in radio listenership — 22% — has coincided with a record number of people turning to NPR on virtually every other platform. More people than ever are reaching NPR through the website, apps, livestreams, and smart speakers ("Alexa, I want to listen to NPR"). In total, 57 million listen or watch or read NPR content each week, up 10 percent from this time last year.

preferred platform." But, in times of crisis, whether it is traditional radio or streaming online radio, radio and on-air personalities present a connection to the real world that listeners trust.

With more than 500 radio stations across the state, Georgia is one of the premier markets in the Southeast with major population areas such as Atlanta (6 mil.), Augusta (609,000), Savannah (393,000), Macon (230,000), Columbus (321,000), and Athens (213,000). According to

Table 3: Economic Impact of Radio – U.S. and Georgia – 2018

Radio Broadcasting	Total Economic Impact-U.S. (2018)	Local Economic Impact-Georgia (2018)	Employment Impact-U.S. (2018)	Employment Impact-Georgia (2018)
	\$478 mil	\$15.26 bil	1.01 mil	32,860

Woods & Poole Economics, the 2018 radio broadcasting economic impact to Georgia was over \$15 billion, and the employment impact was close to 33,000 employees.

While the Georgia radio broadcast industry hit some speed bumps of late due to the pandemic, the one bright revenue spot during 2020 was from political ads. Throughout the summer and fall, Georgians were inundated with what seemed like an endless stream of ads from all types of candidates including presidential, senatorial, congressional, and many others. While

the political rhetoric may have been tough on the listeners, radio executives were thrilled.

In fact, in the Georgia Senate runoff election in January 2021 alone, candidates and Political PACS invested millions of dollars on radio and television to push their candidate and platform. According to Joseph Brannan, who manages 11 radio stations for PMB Broadcasting, "I've been in the industry for 20 years now in this market, and the amount of money that we're seeing across our stations is more than the past 20 years combined, honestly." On some days in December 2020 more than a third of all ads in Georgia were political.



IHEARTMEDIA USES AI TO STREAMLINE RADIO STREAMING

iHeartMedia has 860 live radio broadcasts in 153 markets across America, including Atlanta. As the company emerged from Chapter 11 bankruptcy in 2019, it announced in 2020 that it was launching "AI-Enabled Centers of Excellence" to restructure its top-down programming to make the business more efficient and profitable. Efficiencies are expected to deliver cost savings of \$100 million by the middle of 2021.

Using Artificial Intelligence (AI), iHeartMedia has invested in a music-mixing AI system provided by Super Hi-Fi to improve the digital listening experience. The AI transition calculation enables perfect song segues, sonic logos, personalities, audio advertisements, and other audio elements for commercial streaming music services. The result is perfectly transitioned streams of music, podcasts, interviews, news, weather, advertisements, and other audio content. Super Hi-Fi surpassed 1 billion music transitions in mid-2020 from all clients.

COX MEDIA HELPS LASER TAG PARK DIFFERENTIATE FROM COMPETITION



A laser tag park wanted to build brand awareness and draw attention to promotional offers, specifically attracting consumers that not only frequently visited the laser tag park, but other similar entertainment

venues in the market. Using Cox Media's mobile solutions, a campaign was created that geo-targeted the client's competition and then served ads to people who may be a good match for visiting that area. Cox structured the campaign for the end of the week when customer use was the highest. As the strategy proved successful, Cox added a second campaign to reach college students with a College Night promotion, and a TV commercial spot. The campaign resulted in more than 1.4 million impressions being served with more than seven thousand clicks. The combined success of both core and digital resulted in additional brand awareness, foot traffic, and revenue for the client.

6 PUBLISHING - BOOK, NEWSPAPER & MAGAZINE PRODUCTION AND DISTRIBUTION - ON DEMAND IS THE DEMAND

Publishing—Books, Newspapers, Magazines

Number of Georgia Companies	U.S. Sector Revenue	Georgia Estimated Revenue	Georgia Estimated Employees
191	\$303 bil	\$7.6 bil	6,000

The roots of the publishing industry in the U.S. and around the world go way back. The printed word is an essential part of history and vital today in communicating critical facts and ideas. Our 2021 Ecosystem Report focuses on the following sectors within publishing: books, ebooks, newspapers, and magazines.

“Digital disruption” and “on demand” are terms that have become commonplace in the M&E industry, and they equally apply to the publishing sector. With the advent of e-books, the internet and online booksellers have reshaped global publishing and distribution for more than a decade. With most bookstores closed during the pandemic, it was largely the e-commerce aggregators (like Amazon) that swung into action and got books in the hands of readers.

The digital dimension plays a significant role in improving consumers’ ability to control how and when they can enjoy reading. Taking advantage of the wide variety of mediums from which to choose, consumers can use their ebook on a plane instead of carrying a heavy book, use their smartphone to read a couple of chapters while waiting for a child to finish a piano lesson, or close their eyes and sit back and relax with an audiobook. It can be easily said that publishers today have delivered the Gutenberg-level paradigm shift by effectively combining technology and content to amaze readers.



There have been higher levels of innovation in publishing the last decade than over the last several centuries. And to meet the growing demands and interests of book readers, publishers need to continue to find ways to innovate their delivery models and give the reader a more all-inclusive reading experience. The integration of new technologies (used by all sectors of M&E) and the aggregation of multiple visual techniques can greatly expand the entertainment value of a book.

For example, what if ebooks could deliver a more holistic experience in which the words on the page and a dynamic visual presentation were combined? What if that visual presentation was interactive? The age of the visual story is upon us, and books of the future may not be just written words but a complete package of written and visual elements.

Imagine, for example, a scenario where a book, say Winnie the Pooh or one of the Harry Potter series, asks the reader to scan a QR code to experience the narrative visually on a tablet. The written words lay the groundwork for the story while an action-packed visual presentation uses animation to enhance the overall presentation. Or, taken further, imagine the ability of

publishers and videographers to create 3D animation or holograms on the page (like video games) to totally immerse the reader in the story. Also imagine what the combination of these technologies could do to enhance a student’s learning and comprehension with textbooks. Using today’s technology, publishers can deliver a knockout reading experience that engrosses and thrills the reader.

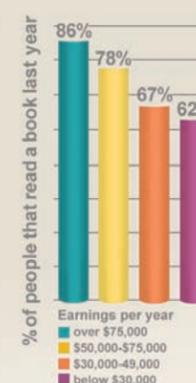
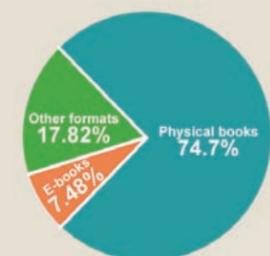
The U.S. publishing sector, which includes both physical and digital books, is the largest in the world.

According to BookScan, the U.S market for books increased 8.2% in 2020 (which is the largest gain since 2010) to \$25.93 billion based on about 751,000 units sold. See Chart 7 for details.

Analysts that follow the book publishing industry were caught by surprise with their forecasts since mid-2020 projections. Based on the pandemic, pundits and prognosticators expected a poor revenue year. But

Chart 7: Book Revenues by Type

Book sales revenue in 2019 totaled \$26 billion



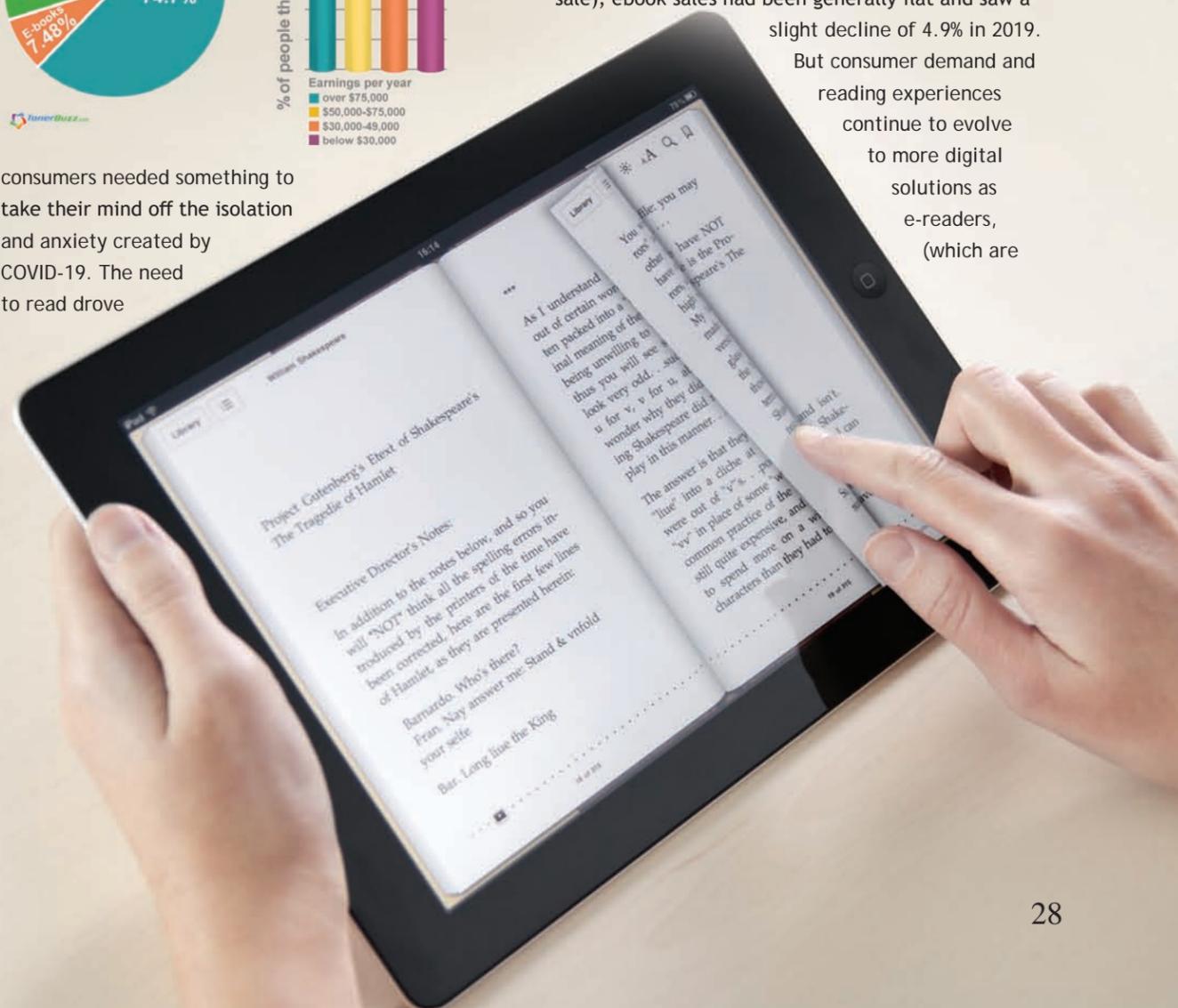
consumers needed something to take their mind off the isolation and anxiety created by COVID-19. The need to read drove

year-end revenues numbers up dramatically, especially compared to historical performance.

The publishing industry also received an immediate boost in the spring 2020 when parents had to cope with remote learning as schools shut, which led to strong demand for juvenile nonfiction titles. The category finished 2020 with a 23.1% increase in print unit sales. The strongest subcategories in the year were education/reference/language, which had a 55.5% increase, and games/activities/hobbies, which rose 31.3%.

Digital books (ebooks and audiobooks) continue to lag industry expectations though as consumers still prefer the tactile feel and engagement with hardcover and paperback books. According to The NPD Group Bookscan (which captures transactions at the point-of-sale), ebook sales had been generally flat and saw a slight decline of 4.9% in 2019.

But consumer demand and reading experiences continue to evolve to more digital solutions as e-readers, (which are



designed to display only ebooks), smartphones, and tablets are bringing entire libraries to users' fingertips.

On to newspapers. The newspaper publishing segment has been in a state of transition over the past decade – much of that due to digital technologies. The newspaper industry in virtually all global markets has been in a state of turmoil over the past couple of decades. Again, industry prognosticators predicted that the printed newspaper would soon be gone. Their prediction – news would be available only in a digital format. While the prediction has some inevitable truth in it, about 4 billion readers across the world chose to absorb their news on newsprint.

The newspaper publishing industry, which arguably remains the foundation of American journalism, is nonetheless threatened by the online media landscape. The industry has struggled to respond to competition from lean and agile digital players that have rewritten the rules of the media sector and challenged the industry's foundational competitive principles. Local papers have suffered the brunt of the damage, but even large and established players have engaged in acquisition and restructuring to survive. (Source: IBISWorld)

Although editorial offices continue to shrink staff to control expenses, the demand for news reporting continues at an all-time high, especially as the pandemic and recent political issues have proven. An interesting highlight of the last few years is the arrival of a new somewhat unexpected audience – teenagers. While teenagers

would seem to have little interest in the “news,” recent research shows that teenagers today are more interested in news than any previous teenage generation. They understand that what happens halfway around the world can greatly affect their lives and in topics like the pandemic, keeping track of what is going on is important. Are teenagers reading printed newspapers? Unlikely. But they are certainly on the internet and getting their news digitally.

The total circulation of newspapers in Georgia is 3.6 million, compared to 161 million in the U.S. Georgia has 163 newspapers in paid circulation and 68 newspapers in free circulation.

“Following a 12.9% decline during the COVID-19 (coronavirus) pandemic in 2020, revenue for the newspaper publishing industry is expected to decline 3.6% in 2021 despite the beginnings of an expected economic recovery as print circulation and advertising dwindled,” according to IBISWorld. “The pandemic led to a rise in digital readership and subscriptions as consumers sought the most

up-to-date information on the pandemic, although these upticks have not compensated for the decline in revenue from print advertising and circulation.”

The newspaper publishing industry

is anticipated to continue its decline over the coming five years. “Although there are strategies available to stem the bleeding of circulation and advertising revenue, print newspapers will likely never regain the primacy they once held in the media landscape,” noted Statista.

Newspaper revenue 2019-2024 print and online

Advertising Revenue	2019	2020	2024	CAGR (2019-2024)
Global	\$49.245bn	\$41.241bn	\$35.937bn	-6.11%
US	\$15.056bn	\$13.067bn	\$10.887bn	-6.28%
Circulation Revenue	2019	2020	2024	CAGR (2019-2024)
Global	\$58.714bn	\$52.163bn	\$50.411bn	-3%
US	\$11.399bn	\$10.182bn	\$9.995bn	-2.60%

Sources: PwC



visual appeal not comparable to that of a printed newspaper – from fashion and travel inspiration to business and sports topics – magazines often showcase certain lifestyles which match the aspirations of their audiences.

impression for the reader, and very importantly for the advertiser.

Magazine publishers are integrating interactive advertisements that can adjust to readers' actions in real-time. These advertisements enable advertisers to add personalized content to enhance the reader experience. This trend is expected to positively influence the growth of the magazine publishing market during the forecast period.

Like books and newspapers, data on magazine readership by format shows that U.S. consumers still prefer print magazines to digital. Although printed media in general is considered less appealing than digital alternatives, it is perhaps the unique appeal of magazines that has helped them to survive. Magazines have a certain visual appeal not comparable to that of a printed newspaper – from fashion and travel inspiration to business and sports topics – magazines often showcase certain lifestyles which match the aspirations of their audiences.

The continued preference for printed magazines may be a comfort to publishers, but digital alternatives are increasing in prevalence, and magazines are finding themselves in close competition with blogs. Blogs also provide niche and visually enticing content, but few ask for financial contributions from their readers. The proliferation of free digital content poses risks to paid physical media, and the magazine market will rely on its audience purchasing physical copies as well as advertisers continuing to invest in printed publications if the offline segment of the market is to survive.

“Consumers and advertising dollars are expected to continue migrating to the internet, forcing legacy publications to compete with a growing number of increasingly professional and mature online-only outlets.”

The global magazine market is seeing a similar decline in revenues as the newspaper sector. Consumer and trade magazines are forecast to drop from \$91.9 billion in 2017 to \$88.1 billion by 2022, according to PwC.

The U.S. magazine publishing industry includes about 5,600 establishments (single-location companies and units of multi-location companies) with combined annual revenue of an estimated \$27 billion. Audiences have become accustomed to the advantages offered by digital alternatives, making it increasingly difficult for print publications to keep their readers. Although competition is becoming more and more fierce, the total number of magazine readers in the U.S. has actually seen a slight increase in the last decade. The number of magazines has also grown steadily each year. U.S. magazine industry revenues have fallen sharply in the past decade from \$46 billion in 2007 to just over \$26 billion in 2019. Print advertising and subscription revenue has been the primary source of the pain as the internet changed the print publishing industry drastically and reshaped not only how consumers engage with content, but the kinds of content they enjoy.

In Georgia, there are 181 magazine publishers. Georgia's magazine publishers are faced with similar challenges as the newspaper publishers. Even with the prominent use of color in magazines, the digital format delivers a stronger visual

The telecommunications industry has many roles in our society today. One of those roles is being the backbone for delivering M&E products and services to consumers and businesses. Technologies such as 5G and Wi-Fi 6 will provide the speed and data integrity needed to keep consumers happy and buying more services.

The GSMA (Global System for Mobile Communications Association - represents the interests of mobile network operators worldwide)

Nearly two-thirds of the global population will have Internet access by 2023. There will be 5.3 billion total Internet users (66 percent of global population) by 2023, up from 3.9 billion (51 percent of global population) in 2018. The number of devices connected to IP networks will be more than three times the global population by 2023.

Cisco Annual Internet Report, March 2020

estimates that 5G will generate \$700 billion in economic value, with enterprises representing 68% of the market, led by retail, government, and finance applications. The GSMA annual State of the Industry Report on Mobile Money reveals a dramatic acceleration in global mobile transactions during the COVID-19 pandemic as lockdown restrictions limited access to cash and financial institutions. The report found that the number of registered accounts grew by 13% globally in 2020 to more than \$1.2 billion - double the forecasted amount.

In North America, faster networks, combined with rising adoption of unlimited data plans, will allow subscribers to access a wide range of entertainment services on their smartphones. For example, 41% of U.S. subscribers watched paid-for online TV subscription services on their smartphones at least once per month in 2019, up from 27% in 2018. (GSMA)

Telecommunications organizations continue to look for ways to accelerate innovation in service delivery, while controlling ever-growing costs.



Some of these innovations include network automation and edge computing. One favored option is moving network segment support to the cloud and using IoT (Internet of Things), artificial intelligence, and machine learning to provide vital data to address and fix transmission performance issues before they arise and impact customer service.

IDC predicts that in two years, 45% of IoT-generated data will be stored, processed, analyzed, and acted upon close to or at the edge of networks.

Increasingly, customer retention will depend upon having a single platform capable of satisfying a wide range of entertainment desires. So, rather than focusing solely on streaming video, providers will likely explore potentially adding games, music, and podcasts to their suite of offerings or partnering with other providers:

- U.S. paid subscription-based music streaming revenues grew from \$1.2 billion in 2015 to \$5.9 billion in 2019, a compound annual growth rate of 49%. Deloitte's Digital Media

Trends Survey revealed that 12% of US consumers added a paid music streaming service during the early stages of the pandemic.

- Podcast-based advertising spending was estimated to rise from \$678.7 million in 2019 to \$863.4 million in 2020. By helping to satisfy consumers' demand for original content, podcasts now reach more than 100 million Americans every month—an audience that is becoming increasingly diverse. (Source: Deloitte)

To a large extent, for M&E sectors to succeed, the telecommunications must make sure the infrastructure (backbones and platforms) are available, secure, dependable, and easy to use.



F ECOSYSTEM REPORT CONCLUSION - DYNAMIC AND DIVERSE EQUALS OUTSTANDING OPPORTUNITIES



Media & Entertainment's overall health and outlook is very promising. From many points of view, the industry has been in the right place at a very difficult time. Fortunately, the backbone of the industry was already in place in terms of technology, infrastructure and creative content to meet consumer demands during a stay-at-home health crisis. In addition, the M&E industry including its subsectors, was able to pivot relatively quickly to adjust their distribution and business models accordingly. But, resting on one's laurels is not the best course of action for this industry.

Consumers have willingly merged M&E's products and services into their daily lives. In many cases, these incremental additions to their lifestyles have changed the way consumers interact with the world around them. With these changes, consumers are increasingly becoming more knowledgeable, and thus their demands are increasing to make the M&E products and services they enjoy more accessible and relatable. And the M&E industry must continue to step up.

M&E companies need to be willing to meet consumers where they need to be met - either

at home, online or on the road. As the global pandemic subsides, consumers will have many more options on how to entertain themselves (live events, sporting events, travel, and leisure, etc.). They will take what they learned from the pandemic in terms of M&E choices and either stick with what they have or find new alternatives. To be successful, M&E companies must continue to adapt and evolve their products as consumers behaviors change. Companies will need to continue to invest in technologies that improve the overall customer experience, and find ways to deliver more original programming, more engrossing video games, more engaging published materials. The technology is available to improve content and distribution methodologies in remarkable ways. Organizations that invest wisely will profit and will undoubtedly succeed in maintaining and growing market share, while nascent companies will disrupt and find a more creative way to do things. Above all, what comes first is increasing their understanding and accurately interpreting buyer needs.

The commonalities for the M&E sectors are what set the industry apart from other less dynamic industries. Georgia, in particular, has created an

economic and cultural ecosystem that sets it apart from other states. In this case, being different is good and prosperous. Here are important areas where Georgia leads:

- **Creative Storytelling** - the ability to tell a good story is at the core of M&E, along with the ability to distribute the finished product effectively. Inspired creative teams in Georgia can use 3D/4D, algorithm editing, dual camera virtual reality, and other technologies to tell more vibrant and visually exciting stories for moviegoers, television watchers, music listeners, and video gamers.
- **Music Creation and Delivery** - the technology to make music and distribute music has evolved consistently through the years, but never at the rate that we see today. Georgia's musicians and producers can reach consumers in many more ways than ever before using technology to help inspire better recordings and getting them to their audiences more quickly and easily.
- **Reading and Learning** - one thing we have learned from the pandemic is that adults, teenagers, and children are reading and listening more. Content has new and advanced ways to reach its audience. eBooks, ereaders, and audiobooks while still lagging printed materials in demand, will find their place in the universe of readers.
- **Creative Business Models** - companies will increasingly evolve their business models from older, outdated methods to inclusionary models where collaboration and synchronization creates shared results. The M&E industry, by nature, is fun. It needs to remain that way.
- **The Backbone** - Atlanta is well known for the strengths of its communications

backbone. It is powerful, resilient, and dependable. Telecommunications companies provide the rails on which M&E depends and will continue to improve delivery speed and transmission quality. To keep standards high, the backbone players will need to continue to make investments to improve their operations through advanced technologies.

By 2024, TAG expects members of Georgia's M&E ecosystem will embrace the potential of advanced technologies to create and deliver outstanding products and services. The culture is right, and the opportunities are outstanding. M&E companies are listening to their audiences and responding with marvelous solutions. They are making the lives of people around the world more meaningful and happier through its diverse and dynamic creations. We look forward to watching, along with you, the M&E industry evolve and prosper.

Thank you for letting TAG share a look at a very important industry in the Georgia ecosystem.

Film And Video Production and Distribution

88.5 The Truth, Inc.
 Anverse, Inc.
 Atlanta Radio Korea, Inc.
 Augusta Radio Fellowship Institute, Inc
 Barrow Radio Broadcasting LLC
 Bostwick Broadcasting Group, Inc.
 Broadcast South, LLC
 Bryan & Bruce Hicks Partners
 Burgess Broadcasting, Inc./ DbA/WGAA
 Calhoun Community Radio Inc.
 Cherokee Broadcasting Company
 Christian Pursuers' Radio, Inc.
 Christian Radio Fellowship, Inc.
 Cinecom Broadcasting Systems, Inc.
 Coffee County Broadcasters, Inc.
 Colquitt Broadcasting Company, LLC
 Colquitt Community Radio, Inc.
 Cox Radio, LLC
 Cripple Creek Broadcasting Company
 Cumulus Licensing LLC
 Dade County Broadcasting, Inc.
 Davis Broadcasting, Inc.
 Dickey Broadcasting Company
 Dodge Broadcasting, Inc.
 Earnhart Broadcasting Co., Inc.
 Echo Broadcasting Network, Inc.
 Exponent Broadcasting, Inc.
 Fannin County Broadcasting Co., Inc.
 Flint Media, Inc.
 Georgia Mountain Broadcasting Corporation
 Georgia-Carolina Radiocasting Company, LLC
 Georgia-Cumberland Association
 Golden Isles Broadcasting, LLC
 Habersham Broadcasting Company
 Henry County Radio Co., Inc.
 iHeart Media
 Immanuel Broadcasting Network, Inc.
 Jacobs Media Corporation
 Jesup Broadcasting Corp.
 Kirby Broadcasting Company
 Lataurus Productions Inc.
 Lake Hartwell Radio, Inc.
 Lataurus Productions Two, LLC
 Laurens County Broadcasting Company, Inc
 Legacy Media - South Atlanta, LLC
 Life Radio Ministries, Inc
 Lighthouse Christian Broadcasting Corp.
 Lovett Broadcasting Enterprises, Inc.
 Middle Georgia Broadcasting, Inc.
 Middle Georgia Community Radio
 Mitchell County Public Radio LLC
 Mopatches, LLC
 New Mableton Broadcasting Corporation
 North Georgia Radio Group, L.P.
 Northwest Georgia Broadcasting
 Oconee Communications Company, LLC
 Oconee River Broadcasting, LLC

Pandora
 Peach Broadcasting Co., Inc.
 Perry Broadcasting Of Augusta, Inc.
 Plant Broadcasting, LLC
 Ploener Radio Group, LLC
 PMB Broadcasting, LLC
 Pretoria Fields Collective Media, LLC
 Prieto Broadcasting, Inc.
 Qbs Broadcasting, LLC
 Radio Free GA Broadcasting Foundation
 Radio Georgia, Inc.
 Radio Kings Bay, Inc.
 Radio Statesboro, Inc.
 Radix Broadcasting, Inc.
 Rockdale Community Broadcasting Inc
 Rome Radio Partners, LLC
 Satilla Broadcast Properties, LLC
 Shanks Broadcasting, LLC
 Side Communications, Inc.
 Smalltown Broadcasting, LLC
 South Georgia Broadcasters, Inc.
 Southern Communications, LLC
 Southern Media Interactive, LLC
 St. Simons Radio, Inc.
 Starstation Radio, LLC
 Sumter Broadcasting Co., Inc.
 Sutton Radiocasting Corporation
 T.C.B. Broadcasting, Inc
 Thoroughbred Communications, Inc.
 Vision Communications Of Georgia, Inc.
 W. Danny Swain D/B/A/ Radio Evans
 W.G.O.V., Inc.
 WAZX-FM, Inc
 WCHM Radio, LLC
 WFXM-Fm Radio, LLC
 White County Media, LLC
 WJRB Radio, LLC
 WJUL Radio, LLC
 WKNG, LLC
 Woman's World Broadcasting, Inc.
 Word Christian Broadcasting, Inc.
 WSGC Radio LLC
 WULS Inc.

Television Production and Broadcasting

Adult Swim
 Atlanta Television Station WUPA Inc
 Augusta TV LLC
 Bally Sports South (fmr Fox Sports South)
 Cartoon Network
 Christian Television Network, Inc.
 CNN
 Community Network Television, LLC
 Cox Communications
 Cox Media
 Cumulus Media
 Digital Networks-Southeast, LLC
 Dublin Broadcasters, LLC

Georgia Public Telecommunications Comm
 Georgia Television, LLC
 GrayTelevision Licensee, LLC
 Grit TV - Katz Media
 HC2 Station Group, Inc.
 Heartland Media
 ION Television License, LLC
 King Forward, Inc.
 KM LPTV Of Atlanta, L.L.C.
 Lowcountry 34 Media, LLC
 Marquee Broadcasting Georgia, Inc.
 Meredith Ccorporation
 Ministerios Camino De Ssantidad, Inc.
 Narrow Path Productions, Inc.
 New World Communications Of Atlanta, Inc.
 Pacific And Southern, LLC
 PlayOn! Sports (2080 Media, Inc)
 Prism Broadcasting Network, Inc.
 Radiant Life Ministries, Inc.
 Sagamorehill Of Columbus GA, LLC
 The Atlanta Channel, Inc.
 The Weather Company -IBM
 TNT
 Tri-State Christian TV, Inc.
 truTV
 Tuff TV -Seals Entertainment Corp.
 United Media Network, LLC
 Univision Atlanta LLC
 Vinions, LLC
 Warner Media
 Watchman Broadcasting Productions Int'l
 WFXL Licensee, LLC
 WGNM-TV
 WGXA Licensee, LLC
 WJCL Hearst Television LLC
 WOW!
 WXTX License Subsidiary, LLC

Video Gaming and eSports Production and Distribution

2cgvfx
 404 Esports
 AGS LLC
 Alive Studios
 Allied Esports Mall of Georgia
 Amebous Labs
 Angry Hangar Games
 Anigraphical
 APBA Games
 Atlanta Esports Ventures
 Atlanta FaZe (Call of Duty)
 Atlanta Game Cooperative
 Atlanta Reign (Overwatch)
 Atlas Bay VR
 Axis Replay
 Banilla Games
 Big Fun Development Corp. (GamesThatWork)
 Blacktooth Studios
 Blank Slate Animation

Blue Mammoth (Ubisoft)
 Blurscape
 Brave Rock Games
 Brikym Game Studio
 Brown Skin Games
 Burning Fan, LLC
 Cardinal Xpress
 Cellbloc Studios
 Cogent Education
 Deev Interactive
 Dreadfully Digital
 Dream Compass
 Drowning Monkeys
 Eclipse Gaming
 EscapePod
 Extrafeet
 Eyes Wide Games
 Farrago Fiction
 Finite Reflections
 Fluency Games
 Foundry 45
 Furious Union
 Futurus
 Gamer vs Gamer
 GamesThatWork
 Gideon Games Inc.
 Gimmee Games
 Global Education Incorporated
 Greater Good Games
 Halseo
 HangZone
 Hawks Talon GC (NBA 2K)
 HDI Holistic Design Inc.
 Hella Velvet
 Herschend Family Entertainment
 Hi-Rez Studios
 HOF Studios
 I'm Positive Game Studios
 Impeller Studios
 Innovative Math Solutions
 ISO Interactive
 Jennifer Ann's Group
 JWX Software
 Kava (Kaneva)
 Ker-Chunk Games
 Key Smash Studios
 Killbot Studio
 Kiz Studios
 Konsole Kingz
 Kontrol Freek
 Lauer Learning
 Lazer Bread Games
 Linden Lab
 Lion Heart Games
 Mad Elf Software
 Masondogg Studios
 Maxsoll
 Meggitt Training Systems
 Meta Gaming Studios

Method Studios
 Moonlight Kids, LLC.
 Motion Reality, Inc.
 N2 Esports
 Neotl Empire
 New 90s Games
 New Earth Entertainment, LLC
 NR, utd.
 One Man Left Studios
 Pace-O-Matic
 parallel the game
 Persuasive Games
 Pharaoh's Conclave
 Pink House Games
 Poem Studios
 Premier E-Sports
 Products for Robots
 Pugsteady
 Pulseworks
 Puzzles by Joe
 Raja Mandala
 Ringtuple
 RNI - Research Network Inc.
 Rockin' Finance
 Salty Dog Digital
 Sandglass Games
 Scientific Games International Inc
 SCUF Gaming
 SED Gaming
 Severe Studios
 ShadeauxMedia
 Shiny Bolt
 Shiny Dolphin
 Shipwright Studios
 SimCraft LLC
 Skillshot Media
 Soverance Studios
 Sports Challenge Network LLC
 Spray N Pray Studios
 SprySpire
 Strange Games Studios
 Street Cred
 TapJoy
 Tapverse
 Tasty Pill
 TBS Gaming
 Tech Levitate
 Technicolor
 Thrust Interactive
 Trick 3D
 Tripwire Interactive LLC
 Trirem Technologies LLC
 Ultra Group of Companies
 VoxelVerse, Atlanta
 Wabi Sabi Sound
 Wahler Digital
 We Get Around WalkAround™ 3D Tour
 Wicked Pixel Game Studios
 Wyrd Games

X2line
 Xaviant LLC
 XR Atlanta
 Zydexo Gaming (COAM)

Music Production and Distribution

1 Up Recordings
 1017 Records
 11 St. Studios
 247StudiosAtlanta
 380 Studios
 aBs Studios
 Acoustech Music Productions Inc
 American Sushi Recording Studios
 AMS Studios Atlanta
 Armageddon Studios
 Army of Bad Luck
 ATL Sound Studio
 Atlanta HD Studios
 Atlanta Record Factory
 Backwudz Music Group LLC
 Big Coffee Records
 Big Oomp Records
 Black Ice 45 Music Group
 Blue Recorders
 Blue South Recording Studios
 Boris Records
 Brash Music
 Bravo Ocean Studios
 Captive Sound
 Castle Hill Studios
 CleenWorkMedia LLC
 CSP Music Group
 Daemon Records
 DBC Recording Studio
 Devanonthebeat Studios LLC
 DKA
 Doppler StreamCut Studios
 DoubleSharp Studio, Inc.
 Dreamakers Studio
 Dub Beats Productions
 Dust to Digital
 Edition Lilac
 Elevated Basement Studio
 Free Bandz
 Georgia Boy Music
 Grace Celebrating Inc
 Grand Hustle Records
 Green Machine Studios L.L.C.
 Groove Tunes Studios
 Harsh Riddims
 HHBTM Records
 Hinesville Recording Studio
 Home Grown Music Inc
 hottrax records
 Hydrate Entertainment
 Itchy Brain Recording

King Ace Beats LLC.
Led Belly Sound
Lee Davis Studio
Legacy Pro
LoKey Recording Studios
Loud House Studios
Love Renaissance
Lunar Bae
M.A.D Studios Atlanta
Madison Records
Mainstream Recordings
MAW Sound
Means Street Studio
Mercer Music at Capricorn
Moon Shade Hollow
Nash Vegas Studio, LLC
Parhelion Recording Studios
Patchwerk Studios
Persistentmidnight
Platinum Sound Recording Studio
Playback Now, Inc.
Power Entertainment
Professional Sound Images Inc
Psych Army Intergalactic
Quality Control Music
Razor Sharp Records South
Reach Records
Redemption Control, Inc.
RexTrax Recording Studios
Rowdy Records/Dallas Austin Distr.
SBS Records
Scavenger of Death
Secret Cove Studios
Silver Wood
Skurf Productions
Solar Sound Studio
Soul Asylum Studios
Sounds Way Better Entertainment
Spotlight Sound Studio
Stankonia Recording Studios
Star Worx
Street Execs Studios
The Brickyard
The FratHouse
The Lucky Dog Studios
This is American Music
Thorough Entertainment
Tree Sound Studios
TuneCore
WAMM Studios
War Drum Mixing Studio
West End Sound Recording
Wondaland Records
Wonderland
World Wide Recording Corporation
Yj Music Inc

Radio Production and Broadcasting

88.5 The Truth, Inc.
Anverse, Inc.
Atlanta Radio Korea, Inc.
Augusta Radio Fellowship Institute, Inc
Barrow Radio Broadcasting LLC
Bostwick Broadcasting Group, Inc.
Broadcast South, LLC
Bryan & Bruce Hicks
Burgess Broadcasting, Inc./ DbA/WGAA
Calhoun Community Radio Inc.
Cherokee Broadcasting Company
Christian Pursuers' Radio, Inc.
Christian Radio Fellowship, Inc.
Cinecom Broadcasting Systems, Inc.
Coffee County Broadcasters, Inc.
Colquitt Broadcasting Company, LLC
Colquitt Community Radio, Inc.
Cox Radio, LLC
Cripple Creek Broadcasting Company
Cumulus Licensing LLC
Dade County Broadcasting, Inc.
Davis Broadcasting, Inc.
Dickey Broadcasting Company
Dodge Broadcasting, Inc.
Earnhart Broadcasting Co., Inc.
Echo Broadcasting Network, Inc.
Exponent Broadcasting, Inc.
Fannin County Broadcasting Co., Inc.
Flint Media, Inc.
Georgia Mountain Broadcasting Corp.
Georgia-Carolina Radiocasting Co.
Georgia-Cumberland Association
Golden Isles Broadcasting, LLC
Habersham Broadcasting Company
Henry County Radio Co., Inc.
iHeart Media
Immanuel Broadcasting Network, Inc.
Jacobs Media Corporation
Jesup Broadcasting Corp.
Kirby Broadcasting Company
Lataurus Productions Inc.
Lake Hartwell Radio, Inc.
Lataurus Productions Two, LLC
Laurens County Broadcasting Company
Legacy Media - South Atlanta, LLC
Life Radio Ministries, Inc
Lighthouse Christian Broadcasting Corp.
Lovett Broadcasting Enterprises, Inc.
Middle Georgia Broadcasting, Inc.
Middle Georgia Community Radio
Mitchell County Public Radio LLC
Mopatches, LLC
New Mableton Broadcasting Corporation
North Georgia Radio Group, L.P.
Northwest Georgia Broadcasting
Oconee Communications Company, LLC
Oconee River Broadcasting, LLC
Pandora

Peach Broadcasting Co., Inc.
Perry Broadcasting Of Augusta, Inc.
Plant Broadcasting, LLC
Ploener Radio Group, LLC
PMB Broadcasting, LLC
Pretoria Fields Collective Media, LLC
Prieto Broadcasting, Inc.
Obs Broadcasting, LLC
Radio Free Georgia Broadcasting Found.
Radio Georgia, Inc.
Radio Kings Bay, Inc.
Radio Statesboro, Inc.
Radix Broadcasting, Inc.
Rockdale Community Broadcasting Inc
Rome Radio Partners, LLC
Satilla Broadcast Properties, LLC
Shanks Broadcasting, LLC
Side Communications, Inc.
Smalltown Broadcasting, LLC
South Georgia Broadcasters, Inc.
Southern Communications, LLC
Southern Media Interactive, LLC
St. Simons Radio, Inc.
Starstation Radio, LLC
Sumter Broadcasting Co., Inc.
Sutton Radiocasting Corporation
T.C.B. Broadcasting, Inc
Thoroughbred Communications, Inc.
Vision Communications of Georgia, Inc.
W. Danny Swain-Radio Evans
W.G.O.V., Inc.
WAZX-FM, Inc
WCHM Radio, LLC
WFXM-Fm Radio, LLC
White County Media, LLC
WJRB Radio, LLC
WJUL Radio, LLC
WKNG, LLC
Woman'S World Broadcasting, Inc.
Word Christian Broadcasting, Inc.
WSGC Radio LLC
WULS Inc.

Publishing / Book/ Newspaper / Magazine Production and Distribution

6Twelve Magazine
Advance
Albany Herald
Allwrite Advertising & Publishing
Alma Times
America Book Company
American Digger
Americus Times-Recorder
Anvil Publishers Inc
ARMOR
Art papers
Arts & Letters
Athens Banner-Herald

Athens Magazine
Atkinson County Citizen
Atlanta Business Chronicle
Atlanta Communities Magazine
Atlanta Daily World
Atlanta Homes & Lifestyles
Atlanta Inquirer
Atlanta Jewish Times
Atlanta Journal-Constitution
Atlanta Magazine
Atlanta Review
Atlanta Tribune
Atlanta Voice
Audio Connoisseur
August House
Augusta Chronicle
Augusta Magazine
Azizah
Barnesville Herald-Gazette
Be Sweet Publications Inc
Bearmanor Media
Berrien Press
Best Self Atlanta
Blackshear Times
Bossip
Brick Road Poetry Press
Brunswick News
Bryan County News
Cairo Messenger
Calhoun Times
Camilla Enterprise
Catoosa County News
Champion Newspaper
Charlton County Herald
Cherokee Tribune & Ledger
Citizen
Clarity Press, Inc.
Clayton News
Clayton Tribune
Clinch County News
Coastal Courier
Cochran Journal
Colonnade
Columbus Ledger Enquirer
Cordele Dispatch
Courier Herald
Covington News
Creative Loafing
Creative Loafing
CrossRoadsNews
Dahlonoga Nugget
Daily Citizen
Daily Tribune News
Dake Publishing
Dawson County News
Deeds Publishing
Dickey Publishing - Modern Lux. Media
Dodge County News
Donalsonville News

Douglas Enterprise
Dunwoody Crier
Early County News
Effingham Herald
Elberton Star
Elevation Book Publishing
Europa
Familius
Fannin Sentinel
FENUXE
Five Points: Journal of Lit. & Art
Flagpole
FORE Georgia
Forest-Blade
Forsyth County News
Foxfire
Franklin County Citizen-Leader
Frederic C. Beil Publisher
Fulton County Daily Report
Gainesville Times
Gallopade Publishing
George-Anne
Georgia Family Magazine
Georgia Fire News
Georgia Magazine
Georgia Post
Georgia Southern Magazine
Georgia Trend
Gray's Sporting Journal
Gwinnett Daily Post
Hartwell Sun
Henry Herald
Herald-Leader
HipHop Weekly
Hogan's Alley
Houston Home Journal
Inner Light Publishing
INsite Magazine (Atlanta)
Jackson Herald
Jackson Progress-Argus
Jeff Davis Ledger
Jera Publishing
Jezebel
Jones County News
Khabar
L.B. Publishing
LaGrange Daily News
Lake Oconee Breeze
Lanier County News
Ledger-Enquirer
Like The Dew
Lit Fire Publishing
Macon Telegraph
Majestic Publishing
Marietta Daily Journal
Mercer University Press
Metter Advertiser
Miller County Liberal
Modern Luxury Interiors Atl.

Monticello News
Morgan County Citizen
Moultrie Observer
New South Journal
Newnan Times-Herald
News-Observer
News-Reporter
North Georgia Living
Northeast Georgian
Ocilla Star
Paste
Pathfinder Press
Peach Magazine Atlanta
Peachtree Publishers Ltd
Pelham Journal
Post-Searchlight
Quitman Free Press
Red and Black
Rockdale News
Rockdale-Newton Citizen
Rome News-Tribune
Savannah Magazine
Savannah Morning News
Scrilla Guerillaz Enter. & Magazine
Season Magazine
Site Selection
Southwest Georgia Living Magazine
Statesboro Herald
Stroud & Hall Publishers
Technique
Teen Ink
Telegraph
Terminus Media
The Atlantan Magazine
The Chattahoochee Review
The Freedom Tribune
The Freeman
The Georgia Review
The James Dickey Review
The Occidental Quarterly
Thomasville Times-Enterprise
Tifton Gazette
Times-Courier
Times-Georgian
Toccoa Record
Today News Africa
Towne Laker
Tribune and Georgian
True Citizen
Union Recorder
University of Georgia Press
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UrbanEdge Publishing
Valdosta Daily Times
Waycross Journal Herald
Wheeler County Eagle
Wiregrass Farmer
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ABOUT TAG

TAG's mission is to Connect, Promote, Influence and Educate Georgia's technology ecosystem to advance the innovation economy. Through those four foundational strategies TAG serves the technology community, helping to support, grow and ignite tech leaders, companies, and the overall Georgia economy. TAG serves more than 31,000 members statewide through regional chapters in Metro Atlanta, Augusta, Columbus, Macon/Middle Georgia, and Savannah. TAG hosts more than 150 events each year and serves as an umbrella organization for 20+ professional societies. TAG provides networking and educational programs, celebrates Georgia's technology leaders and companies, and advocates for legislative action that enhances the state's economic climate for technology.

Additionally, the TAG Education Collaborative (TAG-Ed) focuses on helping science, technology, engineering, and math (STEM) education initiatives thrive. For more information visit the TAG website at www.tagonline.org. For more information visit the TAG website at www.tagonline.org.



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