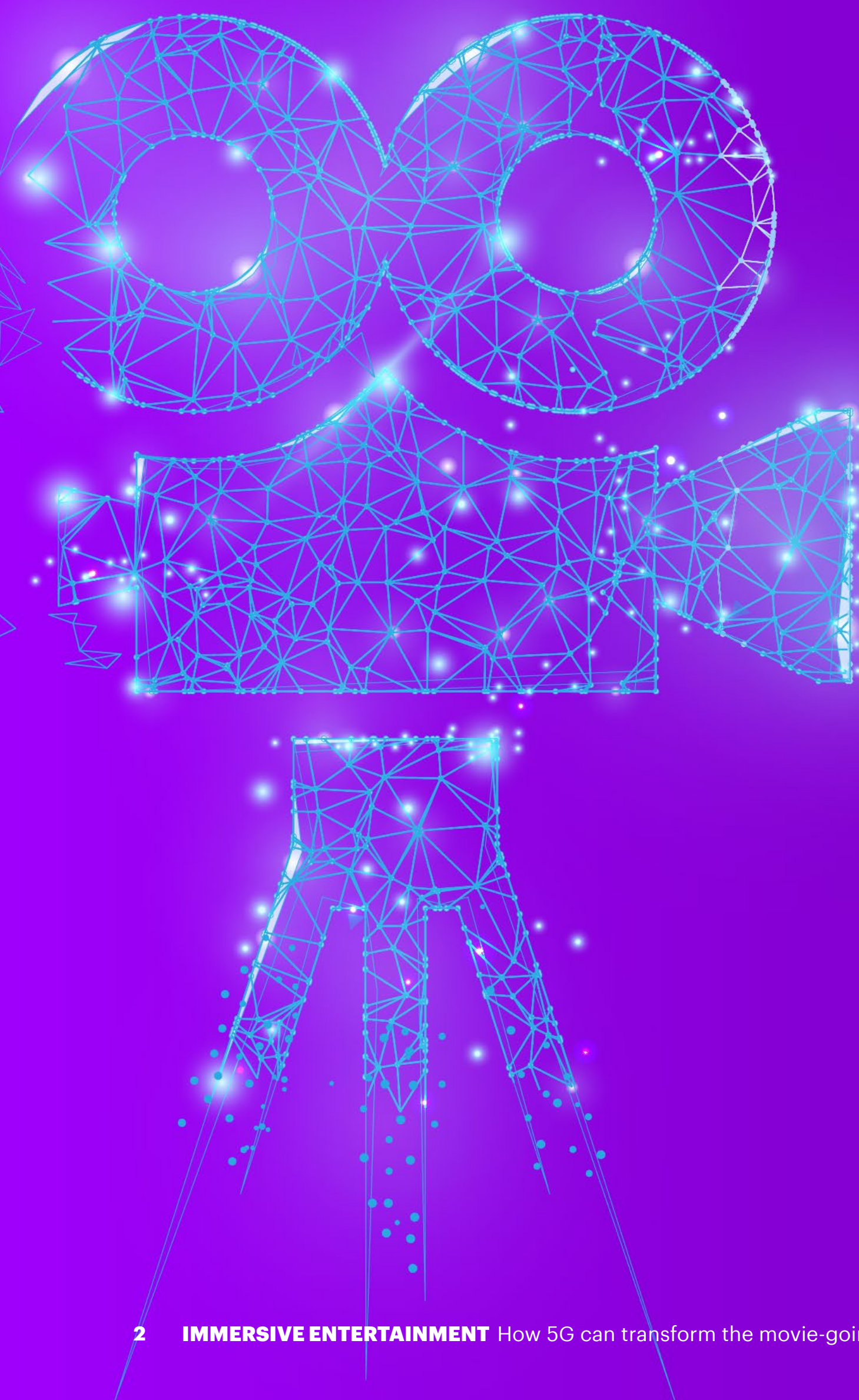accenture

IMMERSIVE ENTERTAINMENT

How 5G can transform the movie-going experience, in a post COVID-19 reality

The COVID-19 global pandemic has impacted all industries.

Demand across media companies is being re-shaped at a rapid pace with a drastic rise in consumption of on-demand content and in-home experiences. Of course, this is coupled with a sudden and universal obliteration of in-person experiences impacting venue owners across the board, including going to the movies. While that is the current reality, there will be a time when consumers will head back to the theaters, albeit in different ways, specific to geographic limitations and guidelines. The default of consuming content at home will no longer be limited to some but comfortable to all. New experiences, fueled by technology, will be required to excite consumers and compel them to "go back to the movies" and reinvigorate the industry.

And, the need for such experiences was evident even before the pandemic.

TOTAL U.S. ADMISSIONS IN 2019 DECLINED NEARLY FIVE PERCENT, THE SECOND-WORST YEAR FOR MOVIE TICKET BUYING SINCE 1995.[1]

That's despite incredible storytelling, 3D, Imax and 4DX experiences, and visual effects and imagery that are so true to life that it's hard to tell the difference from the real thing. At the same time, more new content is being released ever-faster – in 2018 there were 350 more movies released than in 2009.[2]

This has created a business challenge: production studios must invest significantly more to stay competitive, yet those investments are not bringing more people to the theater.

So, what changed?

Consumer expectations fueled by tremendous advances in technology, of course. Today, consumers have unprecedented access to enormous libraries of content: anywhere, anytime and on any device. COVID-19 has driven all of us to take advantage of this access in a decisive way. And the quality of storytelling continues to improve in a highly competitive market. In fact, in an Accenture research study (pre COVID-19) surveying over 1,000 moviegoers,[3] forty-three percent of respondents said they turn to streaming services like Netflix and Hulu most often to watch newly-released video content. That number is exponential now. "The streaming giant (Netflix) announced on Tuesday that it added 15.77 million new paid subscribers globally, well above the 7 million it had expected, as people worldwide sought ways to entertain themselves during the lockdowns."[4]

And while the studios are still drawing audiences to the theaters, especially for big blockbuster releases, the experience will have to be even more differentiated as audiences will be better acclimated to these other entertainment options. In addition, the production of content has been greatly impacted by COVID-19, so studios will need to extend the interest for a particular film while offering a multitude of ways to experience the feature and expand its relevancy.

Figure 1. Consumers turning to streaming services

43%
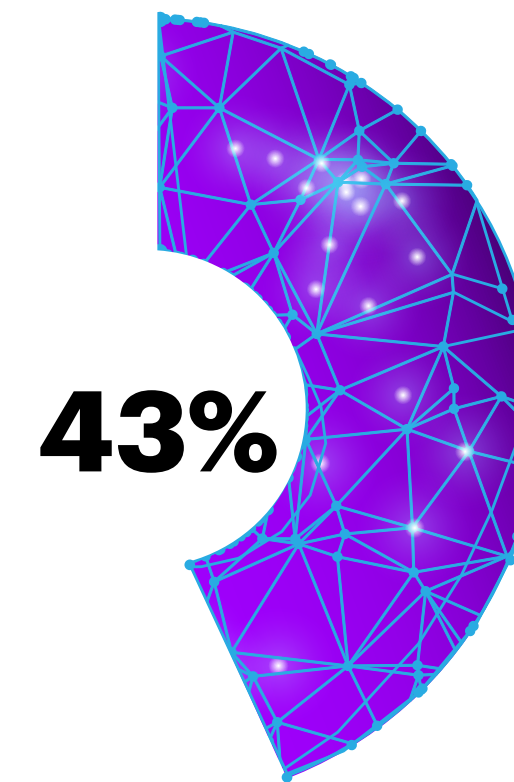
of respondents say they turn to streaming services like Netflix and Hulu most often to watch newly released video content

As Joe Russo, co-creator of many Marvel™ features, stated in a NY Times article, pre Covid-19, "It's tricky, in this market, to get attention for something they (consumers) feel they could consume when it shows up on Apple TV in two months. There has to be a feeling that they gain through that communal theatrical experience that they cannot get at the home."[5]

WHAT DOES THE FUTURE HOLD?

The basic experience of going to see a movie has remained relatively unchanged for years. Choosing a movie, arriving at the theater, navigating the lobby and concession stand, and ultimately watching the movie, are all more or less as familiar to the moviegoers of today as they were to audiences fifty years ago.

Thankfully, the studios that create the movies have continued to produce top-tier content that is best experienced "on the big screen." Just look at Marvel's Avengers: Endgame, which grossed more than $350M in the US over its opening weekend in April 2019.[6]

And yes, theater owners have improved the comfort and convenience of the movie-going experience with digital ticketing, reservable and more comfortable seating and extensive catering options. But despite all of this, ticket sales continue to decline.

Accenture sees a new ecosystem of movie creators and theater owners that will use new technology to increase audience engagement and persuade more people to go to the movies. What if they harnessed the next wave of technology to not only capitalize on the main feature but also to expand the experience beyond the actual time watching the movie? What if they could create a whole new set of movie-going experiences outside of, yet connected to, the theater's main feature?

What if 5G becomes the technology that harmonizes the cinematic experience with the evolving, consumer-centric expectations of today?

What could that deliver? Everything from interacting with the movie characters in your car, to engaging in new digital experiences in the lobby, to experiencing the movies in the screening room in new ways. Companies that ride the next wave of technology to disrupt the status quo and define new theatrical experiences will capture loyal audiences and change the trajectory of their industry; they will bring the audiences back to the theater creating a post COVID-19 norm. **Accenture is leveraging our innovation capabilities to bring to life the power of technology and the new wave of capabilities enabled by 5G.**

5G IS MORE THAN INCREMENTALLY BETTER THAN 4G,
IT'S EXPONENTIALLY BETTER

REQUIREMENT	4G LTE / LTE-A		5G
Bandwidth Speed (Downlink)	~ 1 Gbps (LTE-A with CA)		~10 Gbps (5G mmWave)
Ultra Low-Latency (Responsiveness)	~ 40 – 80 ms		<10 ms
Connection Density (massive IoT)	100,000 devices / km2		1,000,000 devices / km2

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THE POWER OF 5G, ENABLING NEW TECHNOLOGY

The proliferation of 5G and the integration of existing and new technology will enable new capabilities at scale to transform the theatrical experience. For example:

Ultra-high-resolution scan and capture technology
allows anyone's likeness to be accurately rendered into digital video content. Take volumetric capture as an example. This uses several cameras to record high-quality video from various viewpoints around a person or subject. Then, software aligns and stitches all these captured data points in space to recreate a fully volumetric 3D digital capture of the subject. Today, this requires multiple cameras with several high-performance PCs with multiple cores, and a very fast connection to transport captured video to stitching software, all of which is very costly and time consuming. But 5G + edge compute could reduce the data transport costs and, potentially in the future, eliminate the need for the expensive, on-premise hardware.
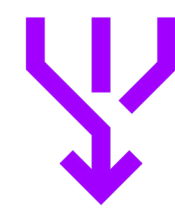
Immersive experiences
continue to evolve thanks to smooth extended reality (XR - Augmented, Virtual, and Mixed Reality Technologies) or even hologram experiences that eliminate motion sickness when viewing. For example, if the end-to-end latency (i.e. delay between the user's head movement and the change of the display in a virtual reality (VR) headset) is too high, users can experience motion sickness. To avoid it, ideally VR systems in particular require <20ms latency. 5G can deliver this.
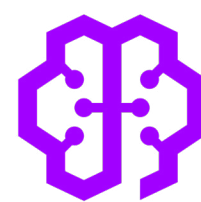
**Real-time rendering and interactive AI**
can help create characters to extend the film narrative and draw in additional audiences seeking a connection between their physical world and digital content. Interactive experiences not only require 5G's low latency but also a great deal of data from the devices everywhere for context. Currently, 4G can only connect 100,000 devices per square km. 5G can increase that ten-fold.

And these technological advances are making it possible to not only enhance individual experiences, but to share them with friends and other fans, whether they're in the next seat in the theater or in another country.

Not surprisingly, **seventy percent[7] of surveyed moviegoers said they would be "likely" to post such a theater experience on social media.** After all, in today's world if your friends and loved ones don't see the experiences you are having real time, did they really happen?

5G can make all of these experiences accessible and "real". The capabilities can be enabled at scale, the technologies can be coupled together, people can enjoy experiences simultaneously, and the hardware can be simplified with the compute power being enabled "on the edge". The fundamental architectural changes and updates to wireless standards that power 5G are designed to support new business models. Harnessing this technology, working in a complex ecosystem and executing at scale will be the keys to success for players in this industry.

Figure 3. Moviegoers' likelihood to share
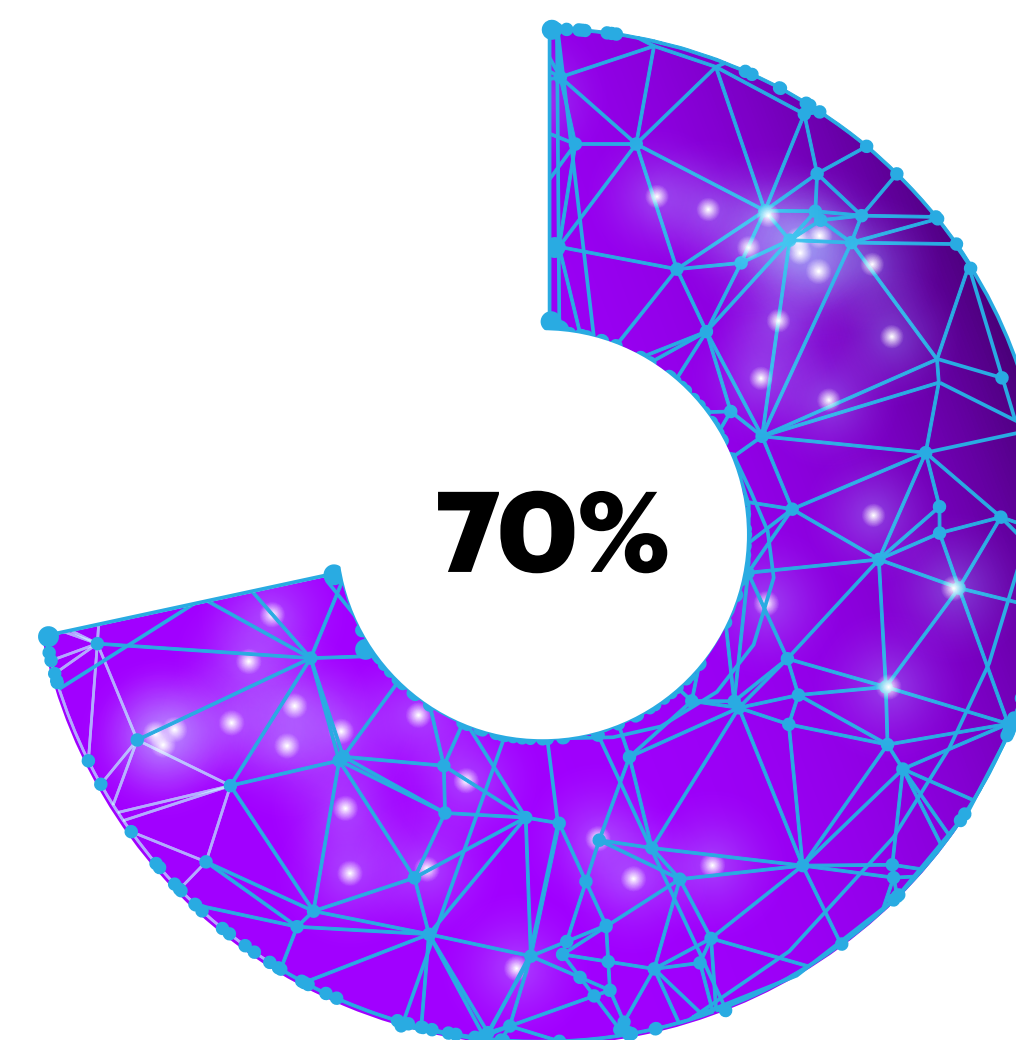
70%

of surveyed moviegoers said they would be "likely" to post such a theater experience on social media

THE CINEMATIC EXPERIENCE OF THE FUTURE, FUELED BY 5G

What if going to the movies was part of a connected experience spanning multiple touchpoints that draw people into the theaters? That means before the theater experience, on the way to the theater, at the theater and back at home – or anywhere consumers are using devices.

What if consumers once again saw the theatrical experience as new and innovative, and there were reasons to go to the theater in addition to seeing the main feature? In an Accenture 5G consumer survey,[8] **fifty-eight percent of consumers said they would be excited about a connected, end-to-end extended reality experience, and eighty-four percent of them would be willing to pay for it.**

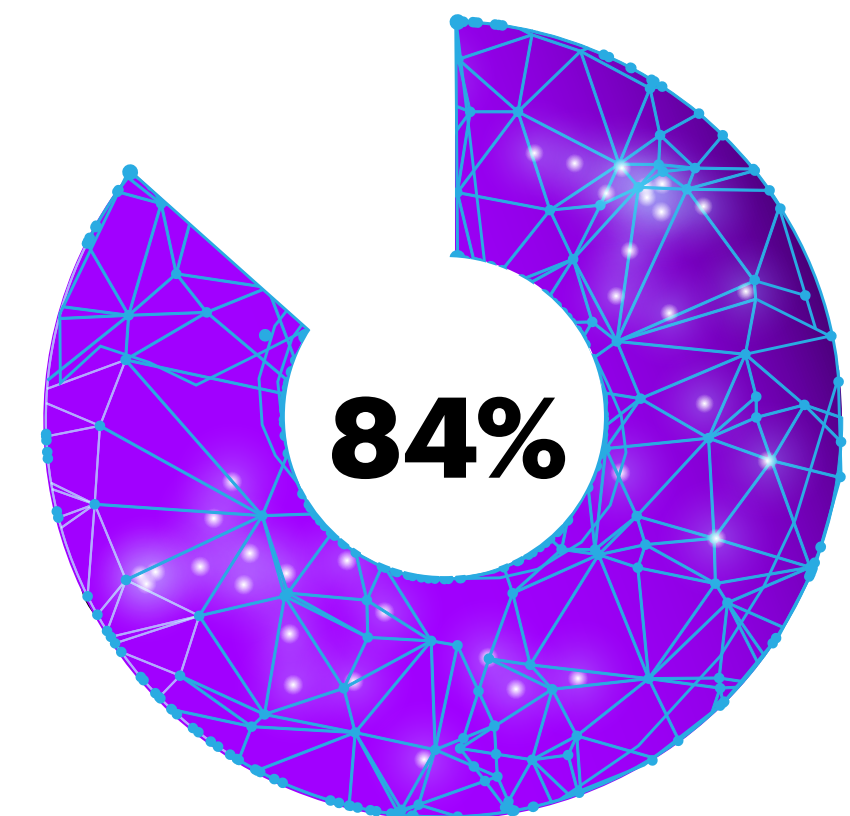**Could harnessing 5G to create unique and compelling experiences draw audiences in for the next 50 years? The answer is yes.**

Figure 4: Consumers excited by XR
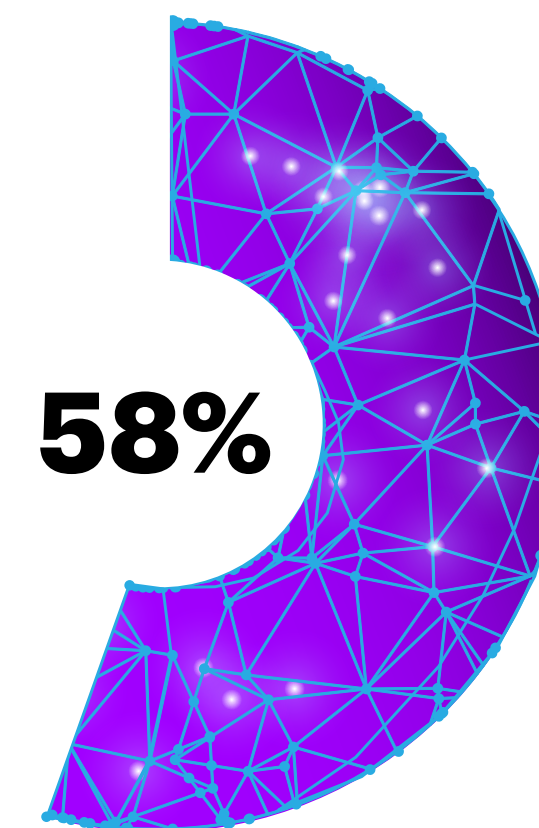
58%

of consumers said they would be excited about a connected, end-to-end extended reality experience

Figure 5: Consumers willing to pay

84%

of them would be willing to pay for a connected, end-to-end extended reality experience

BEFORE AND AFTER THE MOVIE

In addition to marketing a theatrical film, opportunities to engage directly with a consumer in unique ways can further be enabled. Interactive, digital screens in airports, retail stores and theater lobbies would invite consumers to interact "live" with their favorite character.

And before they know it, people are giving high-fives, taking selfies and talking to their favorite characters via personal devices or at specific event locations. Fifty-six percent[9] of people who normally spend time in the theater lobby say these types of experiences would make them likely to attend more movies, and that number rises to more than two-thirds for those who have not been to a movie in the past year.

For example, as 5G networks achieve scale and compatible devices proliferate, interactive screens, from handheld to mural size, could be connected anywhere with 5G coverage availability.

That could mean thousands of connected, interactive screens, taking millions of concurrent user inputs, quickly processing and then returning them via the 5G network without any noticeable lag, all happening across vast geographic areas.

AND WE CANNOT TALK ABOUT NEW 5G EXPERIENCES WITHOUT TALKING ABOUT GAMING

Gaming is one of the most promising entertainment-related 5G use cases, and that is confirmed by younger movie-going consumers. Fifty-seven percent[10] of 18-34-year-olds say they would find multiplayer gaming in the lobby an attractive prospect for an additional movie-going experience.

5G can unlock new opportunities to change the current definition of a traditional video game. 5G-enabled networks will support enhanced mobile broadband, ultra-reliable low latency communications and massive Internet of Things, which can uncover new use cases for XR gaming experiences. 5G will help unleash these at a much larger scale, while simultaneously supporting multi-tenancy, flexibility and reliability.

High-performance gaming streamed to different devices can be used to drive a viral awareness of theatrical releases and incentivize customers to come into theaters to "cash in" or unlock new levels or characters to continue to interact with after they have seen the movie. Whether they're in the theater lobby with a group of friends, riding the subway back from the theater or sitting on the couch at home, multiplayer XR gaming can complement consumers' movie experience with one of 5G's most promising use cases.

All of a sudden, the theater lobby is no longer just a place for waiting in line at concession stands and visiting the restrooms. Instead, it becomes an entertaining part of the movie-going experience, filled with fun, innovative interactions and shareable experiences. And the movie hasn't even started yet!

DURING THE MOVIE

So, what happens once people take their seats in the screening room? The film still remains "the main attraction" but enhancing the screening room experience can bring a new element to traditional content consumption. And, if each showing is a unique experience for consumers, it can generate increased revenue potential.

And what's better than watching a great movie? Being a part of the action of course! While scan and capture technology exists today, consider that 5G's capabilities will enable the use of consumer-grade equipment to enable the insertion of a movie-watcher's likeness into a trailer, the end credits or even as an extra in the main feature.

Then what if your favorite character was "sitting" next to you, as part of an experience only available for theater loyalty members? Or as part of an interactive gaming experience, rewarding highest score to attract consumers into the theaters? Or even as a connected experience with all theaters showcasing the movie on opening weekend around the globe?

What if moviegoers could clip parts of the movie on their mobile device to be revisited later, or connect with other moviegoers about scenes, characters, questions about the movie (all with security and digital rights of course)? This is a great opportunity for studios to prolong the movie-going experience and get customers to re-engage with content after leaving the theater.

These concepts are examples of what the next generation movie-going experience could look like – from an interactive digital screen in the lobby, to real-time user content rendering on the screen, to an exclusive digital clip for at-home viewing; all tied together in one, personalized connected experience.

ON THE MOVE

The lobby and screening room are generally top-of-mind when we think about going to the movies. But the time spent getting to and from the theater also presents new experiential opportunities. In today's world, vehicles are more than just a way to travel from point A to B. With the growing maturity of AR/VR and mobility, cars are becoming new access points for entertainment. Brands can capitalize on this by enabling new, seamless and connected experiences that allow consumers to start on-the-go (e.g. connected car) and continue at physical locations (e.g. movie theaters or at home).

5G mobility will enable opportunities to take movie magic out of the theater and into any location. Just like in theaters, there is exciting potential for immersive entertainment in an autonomous driving world, where the interior of a car is transformed into a place to be entertained.

What else will drivers do when they don't have to drive? Wearable headsets are constantly improving for in-car use, XR on windowpanes is evolving, and the combination of motion and hyper-location data with immersive content will be enhanced significantly with 5G.

5G's ultra-low latency and high data rates will enable a connected device such as a smartphone, tablet or headset to stream a completely augmented, 360-degree world. And that's even possible within a vehicle travelling at speed. By processing images in the cloud or at the edge and delivering content via 5G enabled networks, devices would not need to be connected to a PC (as is the case with most VR headsets today). That means lighter, cheaper and less power-hungry devices. Vehicles themselves are also becoming increasingly connected, further paving the way to deliver these experiences directly in the car.

In most suburban areas, moviegoers are traveling to theaters in cars or buses – so why shouldn't the cinematic experience have an in-transit component to accompany consumers on their ride home?

Imagine a ride home accompanied by a character from the movie hovering just outside the car, or being able to look across the street and see an action scene from the movie you just watched? And perhaps a repeat visit to the movie could unlock a different in-car experience.

CREATING MOVIE MAGIC:
TECHNOLOGY, INNOVATION AND PARTNERSHIPS

Of course, 5G is a key component of creating new experiences that will transform a trip to the movies. But it's not the only piece of the puzzle. Bringing all the required innovations and capabilities together seamlessly to deliver a new experience for moviegoers requires coordination across a broad and complex partner ecosystem.

Creating excitement among consumers and educating them about the new experiences before, during and after the movie theater is only the first step. Disrupting the cinematic experience by engaging with the consumer throughout the end-to-end connected experience requires studios and theaters to innovate, operate and market differently. Being able to pilot new ideas quickly is crucial and there are several key determinants that must be factored into this pivot. Firstly, public safety and of course security and privacy concerns, are critical in the upfront considerations of the design and implementation of these new experiences. Additionally, the right partners who can work with pace and agility to develop concepts into scaled applications will be critical to the success of these new movie-going experiences.

5G opens up entirely new potential for entertainment. It's not a matter of if, but when these connected experiences are available. The technologies are feasible, and the network capabilities are ever closer. Get excited, change your perspective...

COMING SOON TO A THEATER NEAR YOU!

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About Accenture

Accenture is a leading global professional services company, providing a broad range of services in strategy and consulting, interactive, technology and operations, with digital capabilities across all of these services. We combine unmatched experience and specialized capabilities across more than 40 industries – powered by the world's largest network of Advanced Technology and Intelligent Operations centers. With 505,000 people serving clients in more than 120 countries, Accenture brings continuous innovation to help clients improve their performance and create lasting value across their enterprises. Visit us at www.accenture.com

About the Survey

Accenture commissioned YouGov Plc to conduct the consumer survey. All figures, unless otherwise stated, are from YouGov Plc. Total sample size was 1,000 adults who watch movies in theatres. Fieldwork was undertaken on the 13th and 14th of November 2019. The survey was carried out online and meets rigorous quality standards. It employed a non-probability-based sample using both quotas upfront during collection and then a weighting scheme on the back end designed and proven to provide nationally representative results.

Authors:

Jefferson Wang

Managing Director
Accenture Communications and Media Global 5G Strategy Lead

in

Jennifer McLaughlin

Managing Director
Accenture Communications and Media 5G Innovation

in

Jeff Bauer

Group Director
Client Innovation

in