

CXO INSIGHTS

**CXO TECH BRIEF
FOR SPORTS &
ENTERTAINMENT**





1. SECTORAL EXEC SUMMARY



Arnaud Flanquart

Principal, Capgemini Invent Citizen Services

Arnaud is the head of "Tech for Sports" in France. With 15 years of experience, he has been an advisor to the French Ministry of Sports and National Education and now advises public players, professional clubs and national sports associations on how to navigate their digital transformation journeys.



Nicolas Gaudilliere

Vice President & CTO, Capgemini Invent

Future of Technology

Technology geek with more than 15 years of professional experience, Nicolas helps companies embrace their digital transformation through technological innovation. His expertise revolves around Cloud platforms, IOT, AI and Quantum technologies.

THE SPORTS & ENTERTAINMENT INDUSTRY TOOK A HIT WITH THE PANDEMIC, BUT DIGITAL AND OTHER NEW TECHNOLOGIES HAVE ENABLED THE RESTART, DRIVING EXCITING POSSIBILITIES FOR 2021

RETROSPECTIVE ON 2020

PROJECTIONS FOR 2021

Sports and competitions put on hold

- Several months without live sports
- Tokyo 2020 Olympics postponed to 2021
- Media, sponsorship and ticketing revenues under pressure
- Professional sports resumed in empty stadiums, with low TV viewership
- Fitness clubs and indoor facilities shut down

New normal of **fan engagement** expected to be sustainably **remote-centric**, digital and tech-enabled, as sports venues are not expected to be filled, let alone sold out, before several months at least

Gaming and eSports making a headway

- Although the eSports economy was impacted with on-site tournaments being cancelled, remote competitions thrived
- The lockdown encouraged new gaming habits: the gaming market increased by 35% YoY, while hours watched doubled on Twitch in Q2 2020 compared to Q2 2019
- Helped fill the emotional and entertainment void caused by pro sports stopping

The ability to leverage technologies to **build the best on-site and remote experience** (including safety protocols and social distancing) for the staff, athletes and fans of Tokyo Olympics (and other major sporting events such as UEFA Euro) will be closely observed

Organizations and venues are looking to improve their financial efficiency by automating their operations as much as possible and by achieving energy autonomy thanks to 5G and the enhanced use of IoT and AI

Industry restart leveraging digital and other new technologies

- Virtual competitions, inspired by eSports
- Virtual viewing parties to connect fans
- Tech-enhanced NBA Bubble in Orlando
- Ticketing platforms and wearable tech adapted to comply with social distancing norms
- Remote training and coaching for pros and amateurs, with new platforms and content

Finding the right drivers and incentives (new experiences, improved platforms, more action) will be key for the sports media landscape to **get fans in front of their screens once again**, after historically low TV ratings for live sports in 2020

Getting people worldwide to **reconnect with practicing sports** for general well-being, with the help of quantified self technology (wearable tech, data analytics)

5G coming to stadiums

- 94% of European mobile network operators had plans to provide new 5G services to sports venues by the end of 2020
- Verizon equipped 20+ NFL stadiums in 2019-2020

Challenge for sports organizations to **step up data-driven strategy adoption**, especially by setting up end-to-end orchestration and processing of "connected sports" data from athletes, equipment, fields, buildings, stadiums, fans and more

Rise of OTT streaming platforms

- Launch of sports channels on Twitch
- Facebook, YouTube, and Amazon acquiring sports media rights
- Increased adoption of IPTV

Sports and eSports synergies: strategies and partnerships are set to multiply and accelerate to transform business models and revenue streams by addressing and converting younger generations into engaged sports fans



1. SECTORAL EXEC SUMMARY

MAJOR MOVES BY MARKET PLAYERS ATTEST TO THE DISRUPTIONS IN THE INDUSTRY

5G alliances

- Key stadiums and organizations in US, Asia and Europe are partnering with Telcos and network providers to set up and test 5G infrastructure and services

Technology partnerships

- Microsoft is the new official technology partner of NBA. It has launched an AI-powered platform for NBA fans
- Facebook-owned Oculus has signed a deal with NBA to offer an immersive VR courtside experience to fans

Major acquisitions

- Google's acquisition of Fitbit showcases the growing momentum of fitness tech

Key moves in the digital content space

- Juventus is the first European soccer club to launch its own channel on Amazon Prime Video
- La Liga has launched a channel on Twitch
- AC Milan is building its own digital studio (Milan Media House)

eSports & tech sports

- Many sports organizations are partnering with eSports entities
- New performance development center for Team Vitality (a leading eSport team), within the premises of 'Stade de France'
- The Drone Racing League has partnered with US-based sports betting specialist Draft Kings

OUR VIEW ON THE 4 KEY PARADIGMS THAT ARE ALREADY RESHAPING THE INDUSTRY

1. DIRECT TO CONSUMER

- Direct to Consumer strategies are blooming, to disintermediate the relationship with fans
- Multiple drivers such as the advent of 5G production and broadcasting in venues, explosion of streaming platforms and channels, and growing maturity in digital content creation within sports organizations

2. FULL ENTERTAINMENT

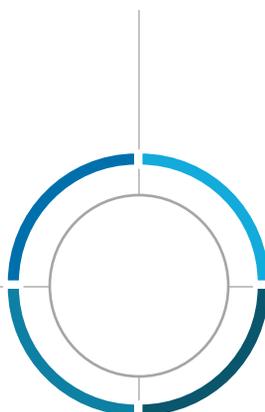
- Transitioning from sports companies to global lifestyle brands, leveraging digital and other new technologies, eSports and innovative partnerships to attract a new fan base and boost revenues
- Build a seamless transition between sports and eSports, leveraging the potential of AR/VR and 5G
- Set up entertainment hubs around stadiums

3. EVOLVED BUSINESS MODELS

- Towards new models to decrease the historical dependency on TV rights and ticket revenues
- Innovative and attractive digital brand activations, experiences and contracts for sponsors and partners
- Data- and technology-driven business models are yet to be fully explored, but should be very impactful

4. DATA-CENTRICITY

- Exploit the wealth of data collected from more sources (athletes, fans, stadiums) with more accuracy (videos, wearable sensors, optical trackers) and more insights (AI, computer vision) to unlock new service and revenue opportunities (data monetization)
- The maturity level is still low today with siloed data and incomplete digital platforms and infrastructure





2.1 HOW IS THE VALUE CHAIN DISRUPTED BY TECH?

Perform

Host

Engage



Athletes & teams

Sports events & venues

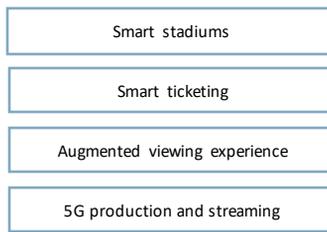
Fans & brands

CHALLENGES

- Equip athletes and staff
- Scout new talent
- Train athletes
- Compete and win

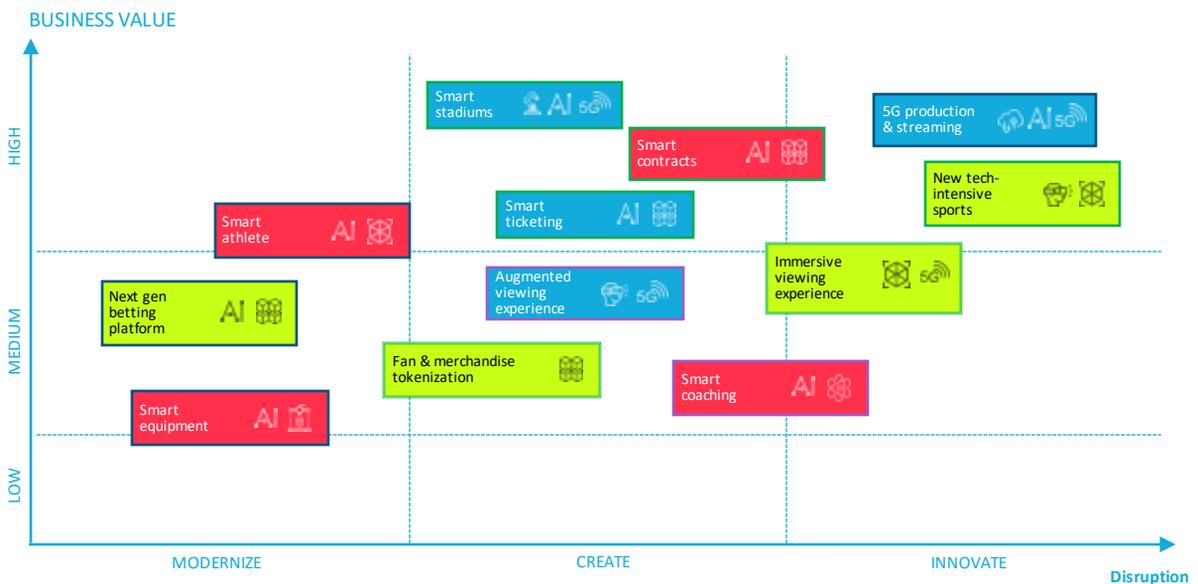
- Build attractive and sustainable venues
- Maintain and secure venues
- Monetize venues
- Entertain fans on-site

- Create content
- Monetize content
- Distribute content
- Streamline and enhance the fan experience



THE SPORTS TECHNOLOGY MARKET IS PROJECTED TO REACH \$31.1 BILLION BY 2024 (1)
 \$19.2 BILLION INVESTED IN SPORTS TECH BETWEEN 2015 AND 2020 (2)

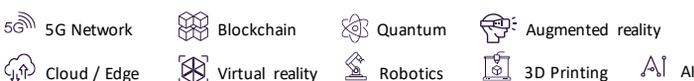
2.2 FOCUS ON TECH DELIVERY MATURITY & BUSINESS VALUE



Disruption level



Delivery maturity: NOW: 1 to 2 years (blue line), NEW: 3 to 5 years (green line), NEXT: > 5 years (purple line)



Sources : (1) Marketsandmarkets (2) SportsTechX



3. FOCUS ON VALUE CHAIN BLOCKS



PERFORM



Market value: More than 28 billion USD



Data-driven winning edge



Mature and proven technologies



IoT, AI, Big Data and VR

- **Needs:**
 - Enable and promote sporting activities for professionals and amateurs
 - Keep athletes healthy and competitive
 - Make game-winning decisions (transfers, tactics)
 - Streamline financial management
- **How tech can help:**
 - **IoT** to track physical and mental data; **VR and videos** to develop skills; **neurotech and 3D printing** to build prosthetics; **AI and quantum computing** to build real-time winning tactics; **blockchain** to secure and optimize contracts and transfers
- **Key figures:**
 - Wearable tech market valued at USD 27.9 billion in 2019, projected to reach USD 74 billion by 2025 (1)
 - Dynamic wearables and fitness tracker market: More than 4.6 billion USD invested between 2015-2020, number 1 segment in sports tech(2)



HOST



Market value: USD 6.8 billion



Security, safety, and viewing experience maximized



Support back to stadium strategies



5G, AI, drones, and blockchain

- **Needs:**
 - Attract fans back to stadiums and events; maintain relevance in relation to the at-home experience
 - Cost efficiency and sustainability of stadiums and events
 - Comply with security and safety regulations
- **How tech can help:**
 - **AI, digital twin, sensors, drones, blockchain** to help manage stadium operations and maintenance in an efficient, safe and secure way; **Blockchain and AI** to streamline and secure the ticketing journey of fans; **AR** to reinvent the sports viewing experience; **5G** to provide enhanced connectivity to staff, sensors and fans, and advanced production capabilities
- **Key figures:**
 - An investment of USD 1.6 billion for a stadium, a world record (MetLife stadium, NYC)
 - 56% of sports fans who enjoyed their tech experience said that as a result of this, they have gone to more physical matches at stadiums(3)
 - The 'Smart stadiums' market was valued at USD 6.8 billion in 2019 and is expected to reach USD 18.23 billion by 2025



PRODUCTION



450 million eSports fans
4 billion soccer fans



New lifelike remote experiences



Retain live sports - less audiences, attract youth



AR/VR, AI, 5G, and blockchain

- **Needs:**
 - Maximize engagement of existing fans, attract new fans
 - Build trust with secure financial transactions
 - Attract new partners and sponsors
 - Reinvent and strengthen the revenue model
- **How tech can help:**
 - **VR** to enhance the at-home viewing experience, **blockchain** to build digital trust with fans and sponsors, **AR/VR** to develop new sports with e-athletes, **AI** for fitness and betting platforms – leveraging all these technologies to ultimately support the **data-driven** transformation
- **Key figures:**
 - 34% of sports fans have already watched eSports and 23% have played one (4)
 - Nearly 70% of fans say emerging technologies have enhanced their overall viewing experience, both inside and outside the stadium (5)
 - 600+ million eSports viewers forecasted for 2023 (6)



4. FOCUS ON USE CASES AND ASSOCIATED TECHNOLOGIES

WEARABLE TECH FOR SMART ATHLETES



PERFORM

- **What?** A health tracking device and platform for athletes based on advanced sensors and a high cloud-based data storage capacity
- **Context:** Pro athletes already use tracking sensor technology and athlete management systems to manage their training and health, yet it is mostly basic data. At the same time, the B2C market for fitness trackers (e.g., Fitbit, ...) is also exploding
- **Zooming in on Whoop strap**, a bridge between the tracking gear of pro athletes and mainstream fitness devices
- **How does it work?**
 - 2 main components: a strap around the wrist, connected to a data analytics application
 - 5 built-in sensors in the strap track a high number of physical and physiological metrics, up to 100 times per second
- **Key benefits**
 - Non-intrusive (no screen on strap) and waterproof, tracks strain, sleep, recovery and other advanced metrics
 - AR and social community features
- **What's next?**
 - Major leagues are starting to approve its use in competitions (MLB baseball)
 - An index to reduce the risk of injury
 - Leverage data to optimize team schedules and travel plans
 - End-to-end data integration from all types of sensors (wearable, audio, optical, etc.) for enhanced insights
 - Combine individual tracking power with global team benefits

DIGITAL TWINS FOR SMART STADIUMS & EVENT MANAGEMENT



HOST

- **What?** Digital twin virtualization for stadium construction and event preparation
- **Context:** Increasingly sophisticated and complex large-scale events call for both in-depth preparation and real-time management of logistics, security and other on-site operations
- **How does it work?**
 - Infrastructure and venue modeling through Azure Digital Twins, combining spatial, asset, and live data
 - Creation of a virtual copy of the area that will be used to provide analytics and insights to improve the overall experience and management of events
- **Key benefits**
 - Enable facility managers to predict issues, optimize sustainability and manage risk
 - Simulate evacuation plans, train event and venue staff
 - Predict potential failures, optimize mechanical operations, air conditioning, lighting (game day experience)
 - Adapt catering to events
 - Gamification of the fan experience
- **What's next?**
 - Leverage the benefits of the digital twin technology to facilitate the reopening of stadiums to large crowds, including the flow of people and seating simulation to ensure social distancing
 - Build synergies with overarching smart city initiatives for a holistic integration with the ecosystem
 - Reinvent the business models of stadiums and generate new sponsorships



TECHNOLOGIES



Why now

- Explosion of fitness, data-hungry consumers
- Athletes need more data accuracy and insights

Key success factors:

- Miniaturization of sensor technology
- Robust underlying data platforms
- Attractive pricing model
- Find ways to engage brands, athletes, and fans

TECHNOLOGIES



Why now

- High pressure in terms of construction costs and deadlines
- More complex requirements and standards

Key success factors:

- Integration of the latest health and security constraints (touchless features, robotics)
- Model sustainability and flexibility
- Consistent data management



4. FOCUS ON USE CASES AND ASSOCIATED TECHNOLOGIES

IMMERSIVE HOME VIEWING EXPERIENCE WITH VR



ENGAGE

- **What?** A VR immersive experience for sports leagues fans. The NBA has partnered with Oculus to deliver new VR-based services to viewers
- **Context:** Professional sports leagues cannot massively open their arenas and stadiums to fans currently and need to create new ways of attracting and engaging fans remotely, during and between games
- **How does it work?**
 - Multiple cameras on the pitch/floor allowing broadcasters to reinforce the live experience
 - The viewer, via a VR headset, has access to exclusive “larger than life” camera angles and other value-added digital content
- **Key benefits**
 - Maximize fan engagement and brand image
 - Craft new service lines and revenue streams
- **What’s next?**
 - Optimize partnerships with traditional and new broadcasters (Facebook, Amazon, etc.)
 - Increase licensing rights revenues by packaging and marketing more advanced VR applications
 - More VR services, with more content and new tech synergies
 - Expand the fan base (attract new tech-savvy fans from Gen Z)

5G-POWERED LIVE PRODUCTION & BROADCASTING



HOST



ENGAGE

- **What?** Leverage 5G and Edge Cloud to reinvent live sports production and broadcasting
- **Context:** High on-site production costs, high latency, low flexibility, need to maximize remote operations versus the need for social distancing
- **How does it work?**
 - Wireless cameras connected to a 5G network, transmitting raw or enriched feeds directly to on-site or preferably remote production sites
 - Verizon, Sony and NBC partnered to set up a demo during an NFL game: video captured using a 5G camera, streamed through Sony’s prototype transmitter box and an Xperia 5G mmWave device, via Verizon’s 5G Ultra Wideband network, to a production room
- **Key benefits**
 - Cost efficiency: reduced infrastructure footprint (less cables, remote teams), completed with the use of cloud services for asset management, post-production and editing
 - Easier market entry to produce, sell and broadcast content – opportunity for sports with low media coverage
 - Performance: faster process, from image capture to broadcast
 - Quality: more camera angles (360-degree view), 4K+ video, HQ mobile phone images
- **What’s next?**
 - Implementation in large-scale events
 - Enhanced IP-based connectivity between sites



TECHNOLOGIES



Why now

- Growing maturity of VR technology and headsets
- Unrenewed home viewing experience

Key success factors:

- Ability to leverage the best technological capabilities to attract gaming/eSports fans (Gen Z, millennials)
- Price point of leisure VR equipment



TECHNOLOGIES



Why now

- Changes in the media rights landscape
- Boom in streaming consumption vs. TV viewership
- Small-scale “5G stadium” trials successful

Key success factors:

- Moving from demos to large-scale implementations
- Ability to blend multiple data/image sources
- Maintain and push performance (latency) standards



4. FOCUS ON USE CASES AND ASSOCIATED TECHNOLOGIES

SMART TICKETING



- **What?** Leverage Blockchain to secure and streamline the ticketing experience
- **Context:** Secondary market, fraud, bots, and third parties are increasing in the ticketing industry
- **How does it work?**
 - Advanced ticketing platforms leverage the latest in mobile, blockchain and AI/machine learning to secure all interactions between the provider and the customer
- **Key benefits**
 - Trace ticket ownership and authenticity (online, shops, partners, etc.)
 - Optimize and secure access control
 - Adjust ticket sales prices depending on the occupancy rate
 - Facilitate logistics when postponing an event / adjusting the seating of an event
 - Fight against fraud, bots, counterfeiting, while driving customer trust up
 - Take control of the secondary market, minimize third-parties in the process
- **What's next?**
 - Proliferation of secondary market ticketing platforms
 - Acceleration of touchless stadium access
 - Disruption in the event organization value chain with the elimination of third-parties

AUGMENTED REALITY EXPERIENCE IN STADIUMS



- **What?** Offer AR services on mobile or wearable devices to enhance fan entertainment in stadiums, during events
- **Context:** sports viewing experience difficult to reinvent, need to attract more fans into stadiums, optimize cellphone usage, leverage second-screen habits, entertain fans during dead time and timeout
- **How does it work?**
 - **Superimpose digital content through the mobile device screen or headset, on field and across venue facilities**
 - Possible applications include access to team line-ups, real-time stats, mini-games, social content, merchandising sales, betting, video replays, GPS guidance and others
- **Key benefits**
 - Offer a premium experience to engage fans
 - Bring the at-home viewing experience inside stadiums (stats, analysis, commentaries)
 - Used as a lever for brand activation
- **What's next?**
 - Improved service quality and responsiveness, using 5G's high bandwidth
 - Enhanced use cases with the emergence of smart glasses
 - Market AR services to brands and partners (ads, brand activations) and fans (incentives, rewards, exclusiveness)



TECHNOLOGIES



BLOCKCHAIN



AI

Why now

- Increased digitization of ticket sales
- Social distancing and contactless touchpoints are the new imperatives

Key success factors:

- Equipping sports venues with sophisticated technology (access control)
- Ability to make ticketing a digital enabler to lure fans back into stadiums

TECHNOLOGIES



5G



AR

Why now

- Ride on the eSports-inspired gamification trend
- AR becoming more interactive
- Need to maximize stadium revenues and compensate for low ticket sales

Key success factors:

- Smartphones AR maturity
- Find sustainable business models to package and monetize AR services
- Define new (latency) standards



4. FOCUS ON USE CASES AND ASSOCIATED TECHNOLOGIES

5G-FUELED DRONE RACING



ENGAGE

- **What?**
 - Drone racing is one of the top rising “tech sports”, already capturing a large audience (250+ million fans) on TV networks and online streaming platforms
- **How does it work?**
 - Drone racing consists of live events where pilots race drones in First Person View, at speeds close to 100 miles per hour, wearing goggles that stream a live video feed from a camera on their drone. The racing tracks are represented in 3D.
 - Zooming in on the partnership between **T-Mobile** and the **Drone Racing League (DRL)** to launch 5G-powered drone races:
 - The DRL was launched in 2015 and the Allianz World Championship is one of its main competitions
 - Thanks to the 5G network of T-Mobile, companies will be able to stream drone races in 3D and in real time to fans worldwide, faster and better
 - A fully Cloud-based production workflow
- **Key benefits**
 - New opportunities for companies and brands to engage with fans
- **What’s next?**
 - Rise of autonomous racing drones
 - More cross-industry brand activations to maximize revenue generation

5G-ENHANCED ESPORTS



PERFORM



ENGAGE

- **What?**
 - Leveraging 5G to drive the growth of eSports, from connected training facilities to enhanced streaming and mobile gaming experiences
- **How does it work?**
 - Dignitas, an eSports pro team, partnered with Verizon to launch a new eSports training facility, fully equipped with a 5G network. It is used as a lab to experiment with 5G use cases
 - 5G provides seamless performance (bandwidth, latency) to eSports athletes and staff for maximized training capacity
 - 5G is also seen as a driver to develop mobile-based eSports gaming experiences and reach larger audiences
 - 5G can support innovative mobile gaming experiences including AR
- **Key benefits**
 - Push the performance of eSports teams further
 - Make the mobile gaming experience as immersive and as powerful as that on PCs and next gen consoles
 - Boost live streaming possibilities on eSports platforms so that players, online streamers and fan communities can stay constantly connected with each other
- **What’s next?**
 - More real-time content and services around eSports streaming platforms
 - Enhanced democratization of eSports: more viewers and more players from new backgrounds
 - New generation of high-end players who grew up on mobile gaming, bringing in opportunities for eSports pro teams and brands



TECHNOLOGIES



Why now



- To cash in on the eSports momentum
- Lesser excitement from traditional sports due to the pandemic and empty stadiums
- Fans looking for immersive experiences

Key success factors:

- Tech maturity (5G and Cloud production, drones, streaming platforms)
- Ability to continuously renew and improve the service quality (streaming, features) and experience to maintain fans’ interest

TECHNOLOGIES



Why now



- eSports fans longing for closer access to pros
- Need to renew the gaming experience (AR)
- Brands looking for ways to build new partnerships to connect with new audiences
- 5G smartphones coming to the market

Key success factors:

- Graphics and processing capacities offloaded to the Cloud
- Ability to bring to market innovative mobile-centric games



About Capgemini Invent

As the digital innovation, consulting and transformation brand of the Capgemini Group, Capgemini Invent helps CXOs envision and build what's next for their organizations. Located in more than 30 offices and 25 creative studios around the world, its 7,000+ strong team combines strategy, technology, data science and creative design with deep industry expertise and insights, to develop new digital solutions and business models of the future.

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