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2023 Global Sports Survey

Chapter 5:
Innovation in sport

FEBRUARY | 2024

Welcome to Altman Solon's 2023 Global Sports Survey

Setting the Stage

The sports media industry is experiencing unprecedented changes. Decision-makers are confronted with increasingly complex choices while fans' habits continue to evolve rapidly, in line with the industry's shifting and fragmented structure. In this newly introduced format, we aim to encourage genuine dialogue among all market participants – fans, rights owners, media distributors, investors, and partners – affected by those market conditions. At a time when the cultural impact of sport is stronger than ever while being on the brink of disruption, we believe it is crucial for the sector to establish a collective viewpoint and push the boundaries of thinking about its near and distant future.

In this context, we are delighted to present the findings of Altman Solon's 2023 Global Sports Survey.

This report is the 5th of 5 publications and focuses on:

1	2	3	4	5
Changing media consumption	Key perspectives: Rights owners	Key perspectives: Media co.	Key perspectives: Investors	Key innovations
October 2023	November 2023	December 2023	January 2024	February 2024

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The Firm

Altman Solon is the **largest and leading worldwide strategy firm** exclusively focused on **telecommunications, media, and technology (TMT)**.

Over 600 consultants across 13 offices worldwide and a **trusted advisor to C-level executives** from blue-chip companies operating in 100+ countries.

We have completed demanding assignments for a **wide range of high-profile sports businesses and their investors**, developing a holistic view of the **value chain and its key trends**, and our focus on TMT can help sports **accelerate its transformation**.

Learn more at www.altmansolon.com

The Survey

Online survey of **150+ senior sports executives globally**, including rights owners, media distributors, and investors, and **~2,500 consumers interested in sports in 8 countries**: US, UK, Germany, France, Italy, Spain, Mexico, China; the survey was fielded in Aug.-Sept. 2023 by our research partners IRIS and GWI.

As innovation cycles speed up, sports and media companies must prioritize high-impact use cases throughout the value chain for efficient transformation

Executive summary

Market indicators

Streamlining production

- **79%** of sports executives believe **automated content creation and management** will have a **moderate to high impact on sports media** by 2030, highlighting the **increasing role of AI** in improving creation, editing, metadata, and planning workflows
- **61%** anticipate **impactful changes** from **remote production**, especially in **lowering costs and footprint** around live event operations

Enhancing distribution

- A large majority of sports leaders also expect **content localization** and **virtual advertising technologies** to have an impact (74%), reflecting the maturity of **transformative use cases** such as **Virtual Board Replacement**
- On the infrastructure side, **cloud-based workflows** are seen as a **key enabler** for the above innovations (64% anticipate an impact)

Innovating consumption

- Fans show **limited adoption** (~5%) for emerging **consumer technologies**, including **VR hardware** and **Web3 assets** (e.g., NFTs, fan tokens)
- This reflects **executives' moderate enthusiasm** towards the latter, with only half forecasting some impact from **content augmentation**, including AR/VR, advanced stat overlays, and gamification
- Expectations are **even lower** for **blockchain and tokenization**

Our Take

Sports media **innovation cycles** continue to **accelerate**, affecting the **entire value chain**

Enabling technologies, like content localization and automation, are **set to bring fundamental changes**, driving cost efficiencies and creating new products through **mass regionalization**

Despite **lower adoption** for **user-facing tech** (e.g., content augmentation, Web3), we foresee a **transformational impact** in the longer term

This is especially true for **Web3 and blockchain,** having the potential to create large-scale fan loyalty ecosystems with seamless earning and reward systems across platforms
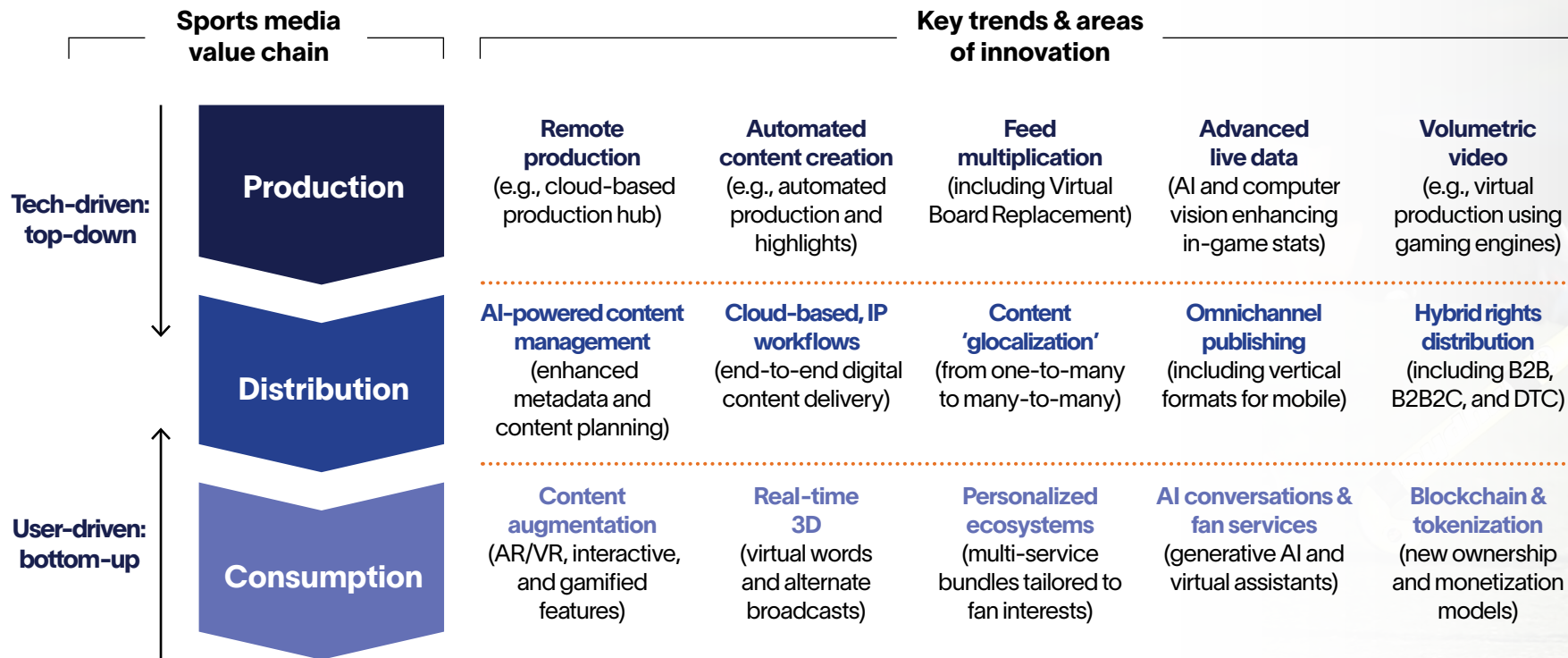
Looking ahead, a **clearly prioritized roadmap** is crucial to distinguish between **nice-to-have, business-critical,** and **high-promise** use cases, as well as to best leverage **interdependencies** between the different technology layers

Innovation in sport

Broader sports media value chain is subject to multiple forces of change, driven by new technologies and changing consumer habits that reinforce each other

Key trends for the future of sports media

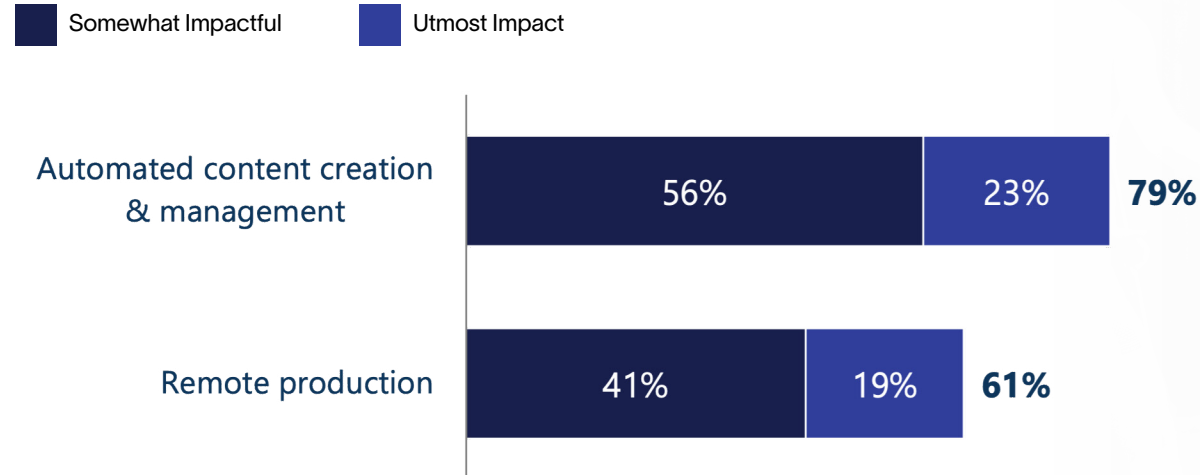| Sports media value chain	Key trends & areas of innovation				
Tech-driven: top-down ↓					
Production	**Remote production** (e.g., cloud-based production hub)	**Automated content creation** (e.g., automated production and highlights)	**Feed multiplication** (including Virtual Board Replacement)	**Advanced live data** (AI and computer vision enhancing in-game stats)	**Volumetric video** (e.g., virtual production using gaming engines)
Distribution	**AI-powered content management** (enhanced metadata and content planning)	**Cloud-based, IP workflows** (end-to-end digital content delivery)	**Content 'glocalization'** (from one-to-many to many-to-many)	**Omnichannel publishing** (including vertical formats for mobile)	**Hybrid rights distribution** (including B2B, B2B2C, and DTC)
User-driven: bottom-up ↑ **Consumption**	**Content augmentation** (AR/VR, interactive, and gamified features)	**Real-time 3D** (virtual words and alternate broadcasts)	**Personalized ecosystems** (multi-service bundles tailored to fan interests)	**AI conversations & fan services** (generative AI and virtual assistants)	**Blockchain & tokenization** (new ownership and monetization models)

Source: Altman Solon

Innovation in sport

Sports leaders expect innovations in content production to have a considerable impact on operational efficiency in the medium term

Production technologies

By 2030, what level of impact do you think each of the following innovations will have on sports media?

■ Somewhat Impactful   ■ Utmost Impact

Automated content creation & management

| 56% | 23% | **79%** |

Remote production

| 41% | 19% | **61%** |

Source: CAWI Executive Survey N=150

"Transformational changes in sports media will be driven by AI that will deliver automatic content production (from filming to production and targeted distribution)."

CEO,
Sports Technology Company

"Cheaper production and augmented reality will drive major changes in the sports media landscape."

CEO,
Sports Marketing Agency

Key insights:

- Sports executives anticipate **automation** technology to have **considerable impact** on sports media (utmost impact for 23%)

- AI-powered applications can be expected to **improve efficiency** for day-to-day production and content teams, with key tasks including (live) video editing, data feed integration, feed multiplication, and content organization / asset management

- Automation also **decreases upfront production costs**, enabling lower-tier leagues to **increase media coverage** and **facilitating market entry** for emerging properties

- Major efficiency gains can also be achieved through **remote production**, which considerably reduces need for on-site resources

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Innovation in sport

Automated content can facilitate the creation of new media services such as near real-time highlights, unlocking rights value *at scale*
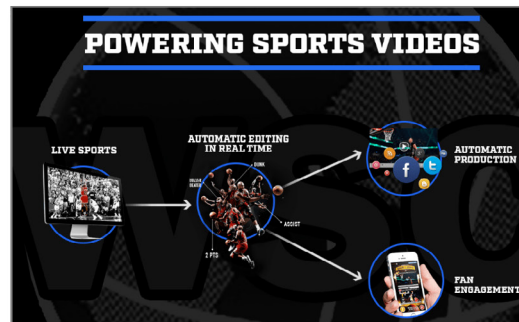
Automated content creation

Case Study: NBA x WSC Sports Technologies

Situation

- WSC creates and delivers **customized in-game and postgame video highlights**, leveraging **AVGEN** (Automatic Video Generator) technology and **machine learning** to automatically generate customized highlights in near real-time; highlights can also be generated using pre-defined queries
- **Three layers of analysis** are applied: visual analysis (player movements), audio analysis (crowd reaction, tone of the commentator), and scraping of live data and stats

Automated highlights enable rights owners to deliver highlights **quickly**, **at scale**, and **at lower costs**, providing partners with **personalized content and narratives**

Key insights:

- Automated content creation and management is expected to bring **unprecedented scale** in sports media

- The impact can be felt not only on the **cost side**, with **increased efficiency**, but also on the **revenue side**, with the **creation of differentiated products** and **rights packages** from a single sports event (e.g., feed multiplication, localized highlight packages), which can **attract new types of media partners** (e.g., publishers, digital platforms)

- Concrete content automation **use cases** can include:

  - **Automated highlight generation** using computer vision algorithms

  - **Automated commentary**, enhanced content and news generation

  - Broadcast optimization via schedule optimization, and **audience prediction**

  - **Personalized content recommendations** and response-based advertising

Source: Altman Solon

Innovation in sport

Remote workflows to strongly impact live production costs and footprints; virtual production to enhance broadcast coverage

Remote & virtual production

Case Study: FOX Sports x Unreal Engine

In 2022, **FOX NFL Sunday** started using Unreal Engine's LED VP in their production facilities, which:

- **Eliminates need** for on-location footage
- Offers **photoreal lighting effects** on set without the constraints of green screens or pre-rendered graphics
- Enables to create **volumetric scenes** by layering **augmented reality (AR)** elements using Unreal Engine's LED walls

FOX Sports' **successful** use of Unreal Engine's **virtual production** for NFL Sunday has prompted consideration for **extending this technology to other sports** (e.g., basketball)

"If you wanted to shoot a promo for a team and with 10 different looks of each player, you could shoot each player on 10 different backgrounds in real time. You can get content from one day for an entire season."

Head of Production, Global Production Studio

Key insights:

- **Remote production** involves an **off-site infrastructure** for capturing and editing live events, **reducing needs** for local equipment and staffing resources by **centralizing media operations** in a remote or virtualized hub

  - Production workflows including feed ingestion, switching, contribution, and graphic insertion can be **managed remotely**, enables centralized control and cost reduction

- **Virtual production** is a technology that combines **real-time computer-generated imagery** (CGI) and **virtual environments** withing live-action filming

  - It incorporates various technology enablers such as **in-camera VFX, virtual scouting**, and **motion capture**
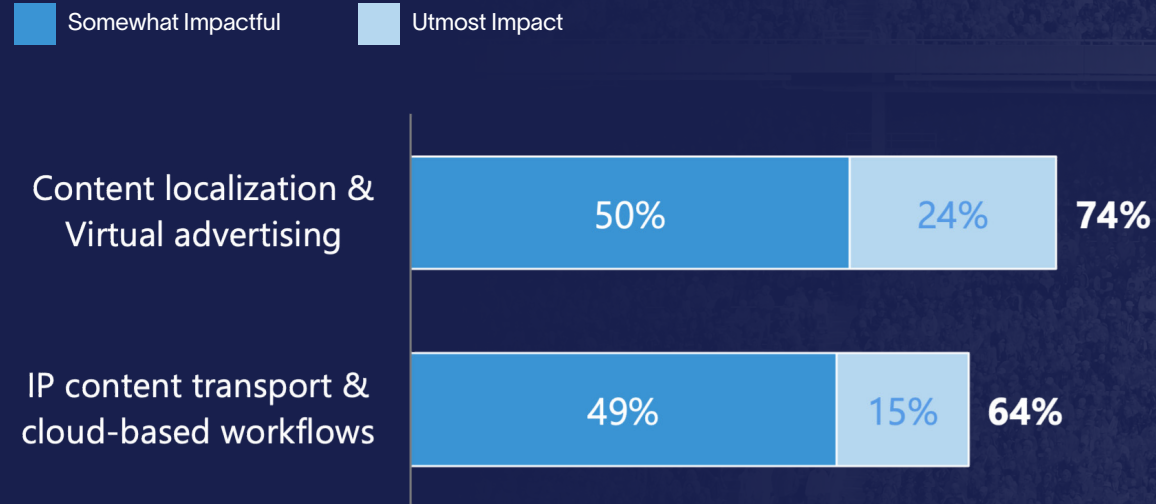
Source: Altman Solon

Innovation in sport

Nearly a quarter of industry leaders believe that content localization will have a major impact on the future of sports media

Distribution technologies
—

By 2030, what level of impact do you think each of the following innovations will have on sports media?

■ Somewhat Impactful   ■ Utmost Impact

Content localization & Virtual advertising
| 50% | 24% | **74%** |

IP content transport & cloud-based workflows
| 49% | 15% | **64%** |

Source: CAWI Executive Survey N=150

Key insights:

- Almost a **quarter of sports executives** anticipate that content localization will play a **substantial role** in shaping the future of sports media

- This reflects the **high expectations** surrounding **Virtual Board Replacement**, which is reaching **technology maturity** yet **with low adoption**

- IP content transport and cloud-based workflows to impact **flexibility & scalability** in distribution operations (pay less), as well as provides a **new base for content monetization** (do more)

"IP-based production, cloud storage of/access to content, and advertising technology will drive transformational changes in sports media."

Managing Director, Broadcaster

"Significant changes are taking place in the production process for sports, including a shift to cloud-based live production in addition to the centralized architecture which has become commonplace."

CTO, Media Advocacy Group

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By tailoring the same event to the specifics of each market, content localization can unlock exponential value for the sports industry

Content localization

Example: Virtual Board Replacement (VBR)

Original   **Region 1**   **Region 2**   **Region 3**

Region 1   **Region 2**

Source: Altman Solon

"Personalized live feeds in combination with no latency virtual advertising has the potential to significantly change the sponsorship and media rights landscape we see today."

Head of Marketing, Sports Federation

Key insights:

- **Winning over international markets** represents a **key priority** for sports rights owners, including major leagues with stagnating domestic growth

- **Tailoring content experiences** to specific cultural, linguistic, and regional preferences is **vital** to **broaden fan base** and **enhance partnership opportunities**, either by addressing new commercial partners (acquisition), or by enabling existing ones to run **more targeted campaigns** (retention)

- Concrete content regionalization **use cases** can include:

  - **Real-time language customization** for commentary and graphics (live)

  - **Localized highlights** featuring local heroes (non-live)

  - **Virtual Board Replacement** (VBR) including in-game advertising feeds personalized to broadcast country, partner, or end users
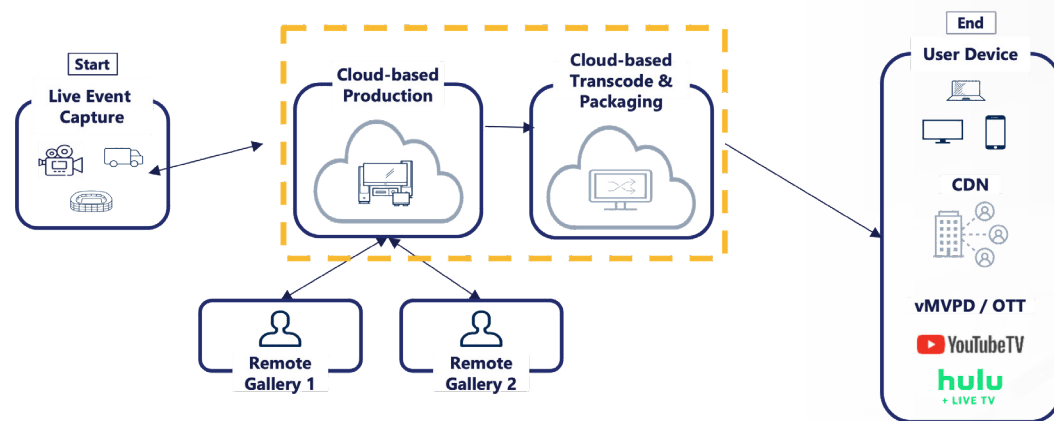
Innovation in sport

IP-based workflows are set to streamline content transport from venue to end users, reducing the need for physical infrastructure

Cloud-based workflows

"The cloud will provide contribution, production and distribution efficiency, and flexibility needed to meet the evolving fan expectations."

Executive, Technology Company

Cloud- & IP-based workflows (live event)

Start
Live Event Capture

Cloud-based Production

Cloud-based Transcode & Packaging

Remote Gallery 1

Remote Gallery 2

End
User Device

CDN

vMVPD / OTT

▶ YouTube TV

hulu + LIVE TV

Select players offering cloud solutions for IP-based workflows

Azure • aws • IBM Cloud • ORACLE CLOUD INFRASTRUCTURE • LUMEN® • Google Cloud

Key insights:

- **Cloud technology** supporting **IP-based workflows** has the capacity to **transform** the sports media value chain, starting at the **infrastructure layer**

- Key **efficiencies** can include:

  - **Reduced hardware equipment** and infrastructure's total cost of ownership

  - **Reduced operating costs** including content preparation and network costs

  - **Facilitated integration** with content takers increasingly focused on streaming

Source: Altman Solon

Innovation in sport

Adoption of cloud-based workflows will in turn accelerate the rise of virtual advertising, paving the way for an integrated ecosystem

Integration across cloud and virtual advertising technology

Content localization, in its existing capacity, is used within the **linear TV model** (mostly on a regional basis)

A new satellite feed is created for **individual continents,** increasing **distribution complexity** and **cost** whilst offering **limited flexibility**

The implementation of the technology and respective use cases are **nascent today**

Moving Virtual Board Replacement to the cloud will be a **paradigm shift** in the distribution of content, unlocking the ability to offer **personalized** (and interactive) **content** at an **individual level**

Will result in **higher monetization potential,** in parallel with a more efficient system **lowering costs**

Programmatic advertising to enable:

- **Precision** targeting
- Higher **efficiency** and **bottom-of-the-funnel** reach
- Access across **multiple platforms** / devices

Linear TV model *(today)* ➤ **Cloud-based model** *(future)*

Source: Altman Solon
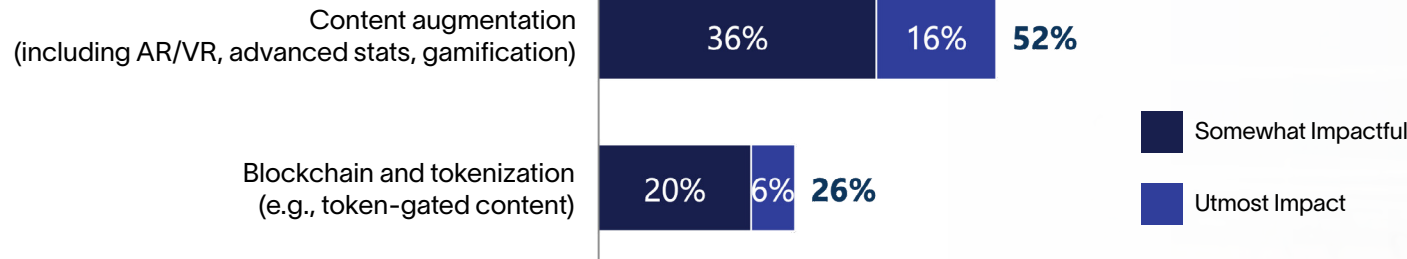
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Innovation in sport

User-facing tech to bring increased immersion and interactivity to (live) sports; half of sports executive believe it will make an impact
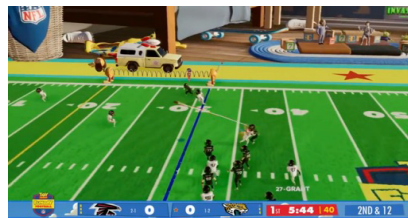
Consumer technology

By 2030, what level of impact do you think each of the following innovations will have on sports media?

Content augmentation
(including AR/VR, advanced stats, gamification)
| 36% | 16% | **52%** |

Blockchain and tokenization
(e.g., token-gated content)
| 20% | 6% | **26%** |

■ Somewhat Impactful

■ Utmost Impact

Example: Live action overlays (AR)

Example: Live animated broadcasts (3D)

Example: NFT Initiatives

NBA Highlight tokens   Sorare Fantasy Token   Socios Fan Y|Tokens

Key insights:

- **~50%** of sports leaders believe that **content augmentation** will have a **moderate to strong impact** on the industry, suggesting a comparatively **lower level of enthusiasm** than for enabling technology

- This can be explained by the fact that many **use cases** have **not been widely adopted** (see following page), or are **not yet feasible on a large scale**

- Yet **continued innovation** around live VR, AR, 3D animated telecasts, and in-stream social and gamified experiences herald a **rich** future for sports media

- Despite its potential, sports executives expect the impact of **blockchain** to be **less significant**, with ~75% of respondents indicating little to no impact

Source: CAWI Executive Survey N=150

Innovation in sport

In line with executive views, fans indicate low adoption for new tech, yet transformational use cases may emerge in the future

Consumer technology

Web3 (tokens & NFTs)

Initial expansion: Low maturity & adoption

Memorabilia: Digital collectibles via own or third-party marketplaces, including both static (e.g. cards) and dynamic (e.g. video clips) assets

Fan tokens: Utility tokens that allow owners to access specific rewards and membership perks (e.g. voting rights)

Gaming: NFT trading cards as utilities for gaming and fantasy sport platforms

What's next: High maturity & disruption

Loyalty **ecosystem** harmonized through **blockchain** technology, enabling fans to **earn loyalty** points on one platform and **unlock rewards** on another

AR / VR

AR consumption: Commonly used by broadcasters to overlay information on screen during broadcasts

VR consumption: Allow fans to watch a sports event live in high immersion (e.g. courtside seat for NBA games)

VR gaming: Sports simulation mini-games (typically offline)

VR training: Athletes can recreate and train for real-life situations

Improved **connectivity** and **hardware** (e.g., Apple Vision Pro) to **democratize live AR** and **social VR**, opening new DTC verticals and partner opportunities

Which of the following devices do you own?/ Which of these do you do?
% respondents selected

Virtual Reality headset / device — **5%**

Purchase cryptocurrencies / fan tokens — **6%**

Purchase digital collectibles (e.g., Non-Fungible Tokens / NFTs) — **6%**

Source: CAWI Executive Survey N=150

Web3 loyalty could connect live streaming with fantasy gaming, creating a virtuous ecosystem for rights owners, fans, and partners

Web3 fan ecosystem

Live Streaming

1 **Watch to earn**

Web3 Loyalty Program

3 **Watch to play**

2 **Play to earn**

Gaming
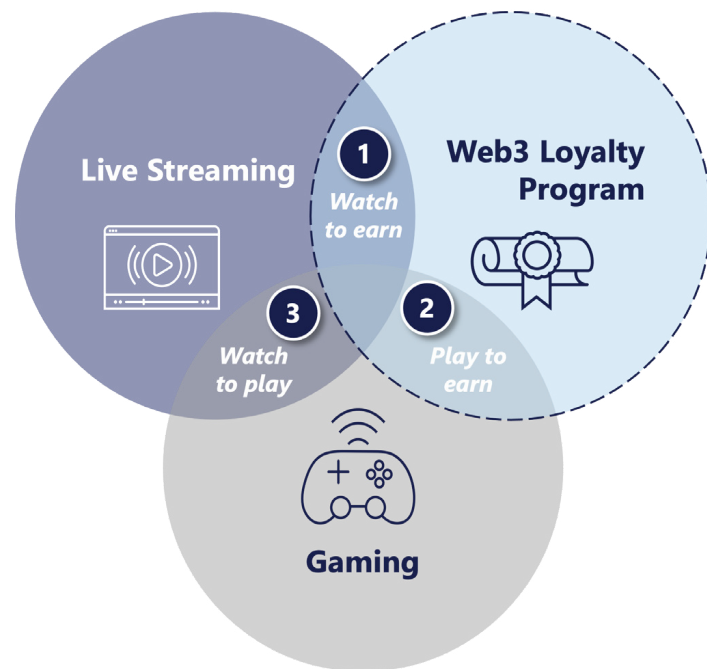
Leveraging centralized blockchain technology, fans to access Web3 loyalty program as a token-gated community using a unique NFT key, entering a virtuous universe of connected experiences:
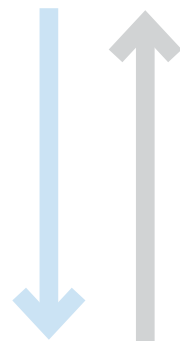
1 Earn loyalty points by watching live sports, creating an incentivization scheme based on tangible utilities

2 Acquire loyalty points by playing games (fantasy and management, simulation), leading to more usage

3 Greater investment in the gaming product in turn creates greater engagement with the media product

Fan to use loyalty points against various rewards provided by both core platforms (e.g., discounted streaming subscriptions, boosters for fantasy) and non-core platforms (e.g., special offers by sponsors)

Source: Altman Solon
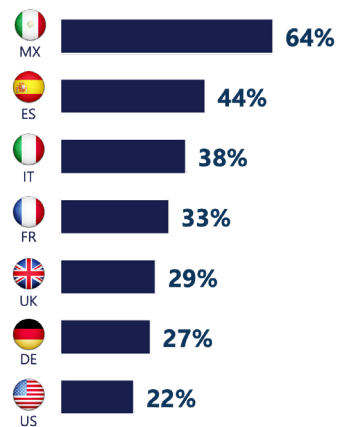
Innovation in sport

Blockchain-based or not, unique digital ID can foster value exchange between fans sharing data and leagues enhancing their services

Digital fan ID

Imagine you had a **unique fan profile and ID that identified you as sports fan** and was a digital record of your sports interests and experiences. Your fan profile and ID could be used across sports websites, apps, venues and shared with sports leagues/teams and media partners to **earn rewards and unlock personalized content and experiences specific to your fandom**. Your profile and ID would be private and only shared with your consent.
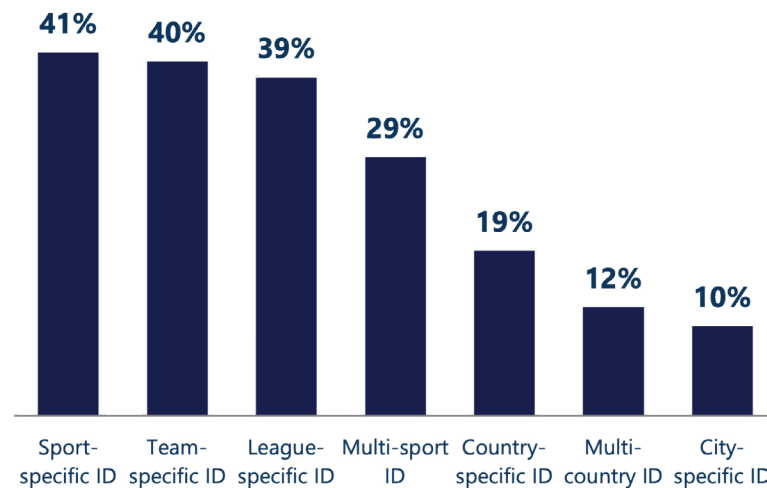
How interested would you be in a unique digital fan profile and ID?
% selected somewhat or very interested

MX	64%
ES	44%
IT	38%
FR	33%
UK	29%
DE	27%
US	22%

Please pick the option(s) you are interested in
% Selected

Option	%
Sport-specific ID	41%
Team-specific ID	40%
League-specific ID	39%
Multi-sport ID	29%
Country-specific ID	19%
Multi-country ID	12%
City-specific ID	10%

Source: CAWI Consumer Survey N=2500, Powered by IRIS

Key insights:

Digital fan ID concept could **change the way fans engage with sports**, serving as a secure, digital record of one's sports interests and experiences, enabling **seamless integration** across sports platforms, venues, and media partners

Leagues are experimenting with this concept; **NBA ID** empowers fans to earn rewards and access exclusive content and experiences tailored to their unique fandom

This model can prove successful if it establishes a **genuine value exchange** between a sports entity and its fans, with the latter receiving **tangible benefits** in return for sharing their data

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What will the future hold? We believe innovation cycles to accelerate and converge further, requiring a clearly prioritized roadmap

"Automated technology and intelligence will affect all areas from production to officiating at many levels of sport."

**CEO,
Sports Marketing Agency**

Our take

Innovation cycles continue to accelerate within sports media, fuelled by both **new technologies** and **evolving consumption patterns. Disruption spans the entire value chain**, from production to consumption.

A **large majority of sports executives** expect **impactful changes** from **enabling technologies** (74% for content localization, 79% for content automation). These not only drive **cost efficiencies**, with remote production and AI to drastically streamline content workflows, but also **unlock revenue streams**. Rights owners can **create new products** by **customizing** their assets **at scale**, including localized highlight packages and live feeds with fully-tailored advertising inventory.

Reflecting **limited fan adoption** to date (5% for VR, 6% for fan tokens and NFTs), sports leaders express **moderate enthusiasm** for consumer technologies. Anticipated

improvements in **connectivity** and **enhanced fan utilities** are expected to propel their maturity, eventually leading to a transformative impact.

Web3, in particular, holds promise for harmonizing **large-scale loyalty ecosystems**, allowing fans to earn and redeem rewards seamlessly across platforms.

In this context, having a **clear innovation roadmap** is imperative for sports and media companies. Distinguishing between **nice-to-have** and **differentiating use cases**, and **identifying interdependencies** between different innovation areas, such as cloud infrastructure enabling automation, automation powering regionalization, etc., is crucial for navigating the evolving landscape successfully.

"Cheaper production and augmented reality will drive major changes in the sports media landscape."

**CEO,
Sports Marketing Agency**

"Content aggregation / subscriber models will develop to lower the cost and simplify access to sports, to deal with the current unsustainable cost/ complexity of accessing multiple sports by sports fans globally."

**CEO,
Technology Company**

Source: Altman Solon

Altman Solon is the largest and leading worldwide strategy firm fully focused on telecommunications, media, and technology

Our services in the sports industry:

- Strategy
- Target operating model
- Organizational design
- Go-to-market
- Financial planning
- Transaction support
- Feasibility assessments

Specific strategy services in sports media:

- Rights packaging and auctioning
- Media rights servicing
- DTC, OTT and Web3
- Content features and pricing
- Fan behavior research
- Remote/ virtual production

San Francisco
est. 2012

Boston
est. 2002

London
est. 2009

Paris
est. 2019

Warsaw
est. 2006

Munich
est. 1996

Americas

EMEA

APAC

Los Angeles
est. 2020

Mexico City
est. 2020

New York
est. 2010

Zurich
est. 2021

Milan
est. 2019

Singapore
est. 2021

Sydney
est. 2021

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At Altman Solon, we have built an impressive team of strategy professionals working at the crossroads of sports and media

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Munich

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Our Research Partners

The consumer research included in this publication was collected by our partners IRIS and GWI as part of an online survey fielded between August and September 2023

IRIS INTELLIGENT RESEARCH IN SPONSORING

GWI.

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