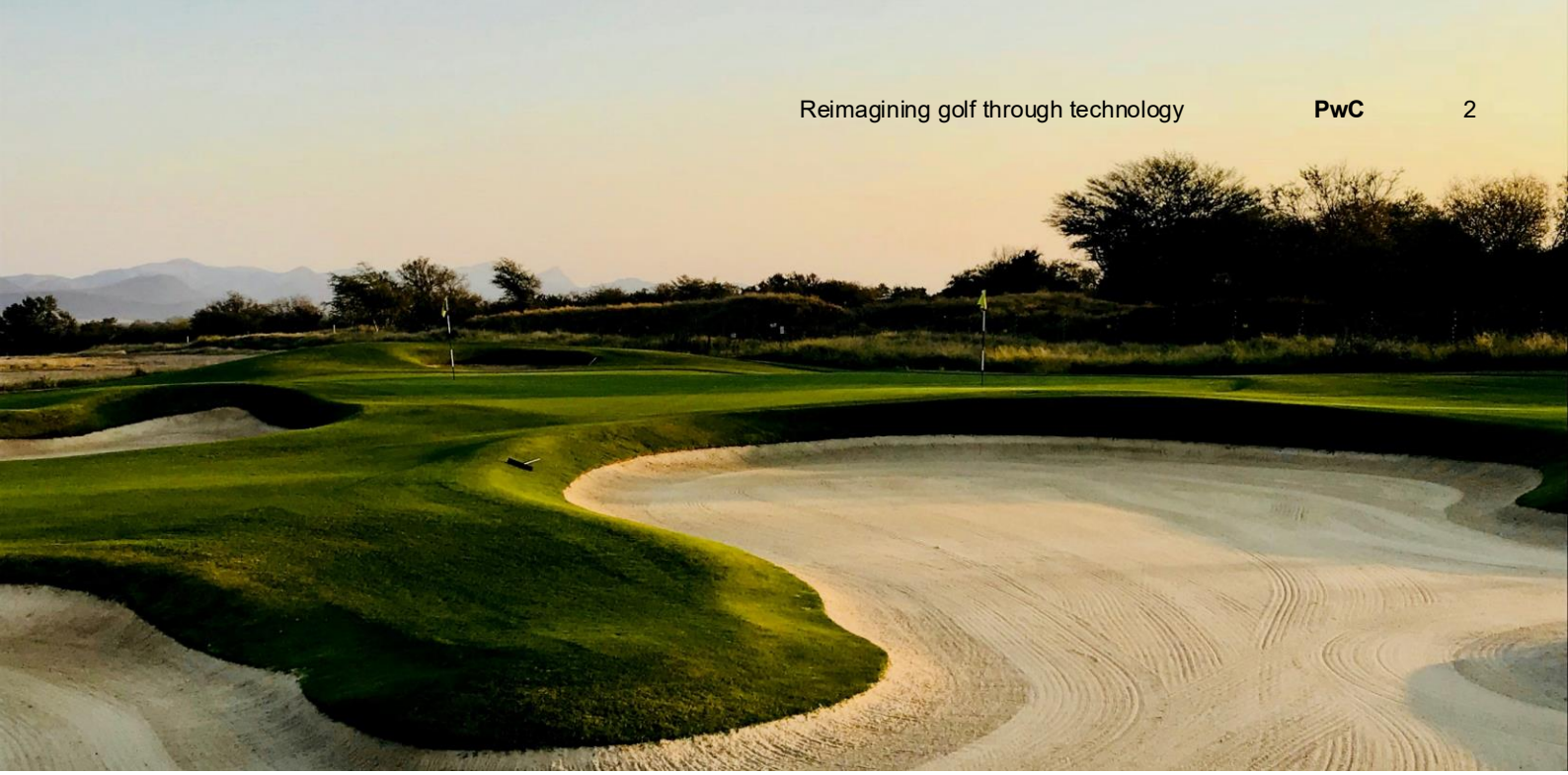
Reimagining golf through technology

Opportunities for the MENA region



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The expanding value of golf

Golf is undergoing a quiet revolution. Once defined by tradition and exclusivity, the game is now being reshaped by digital innovation that is broadening participation, transforming player experiences and redefining the economics of the sport. This paper explores how technology is transforming golf, now a US$83bn global market,[1] from course operations and player performance to fan engagement and identifies the opportunities for the Middle East and North Africa (MENA) region to lead this global shift.

From smart irrigation systems and AI-enabled performance analytics to immersive simulators and entertainment venues, digital tools are creating more sustainable, inclusive and commercially resilient golf ecosystems. For the region's course operators, developers and investors, the opportunity lies in using technology not only to enhance efficiency and sustainability but also to attract new audiences, diversify revenue and position the region as a global hub for golf innovation and tourism.

The global golf tourism segment was valued at approximately US$25.34bn in 2024 and is projected to reach US$41.87bn by 2030, reflecting a compound annual growth rate (CAGR) of 9.1% from 2025.[2] At the same time, the global golfing community has expanded to over 66 million players.[3]

This growth is fuelled by several factors, including the rising number of golf courses worldwide, greater accessibility and a more diverse, inclusive player base. Golf has evolved beyond a sport to become a lifestyle activity embraced by professionals, amateurs and leisure travellers alike. Many enthusiasts are willing to travel extensively to experience top-tier courses and unique golfing destinations, further driving the momentum of the global golf tourism industry.

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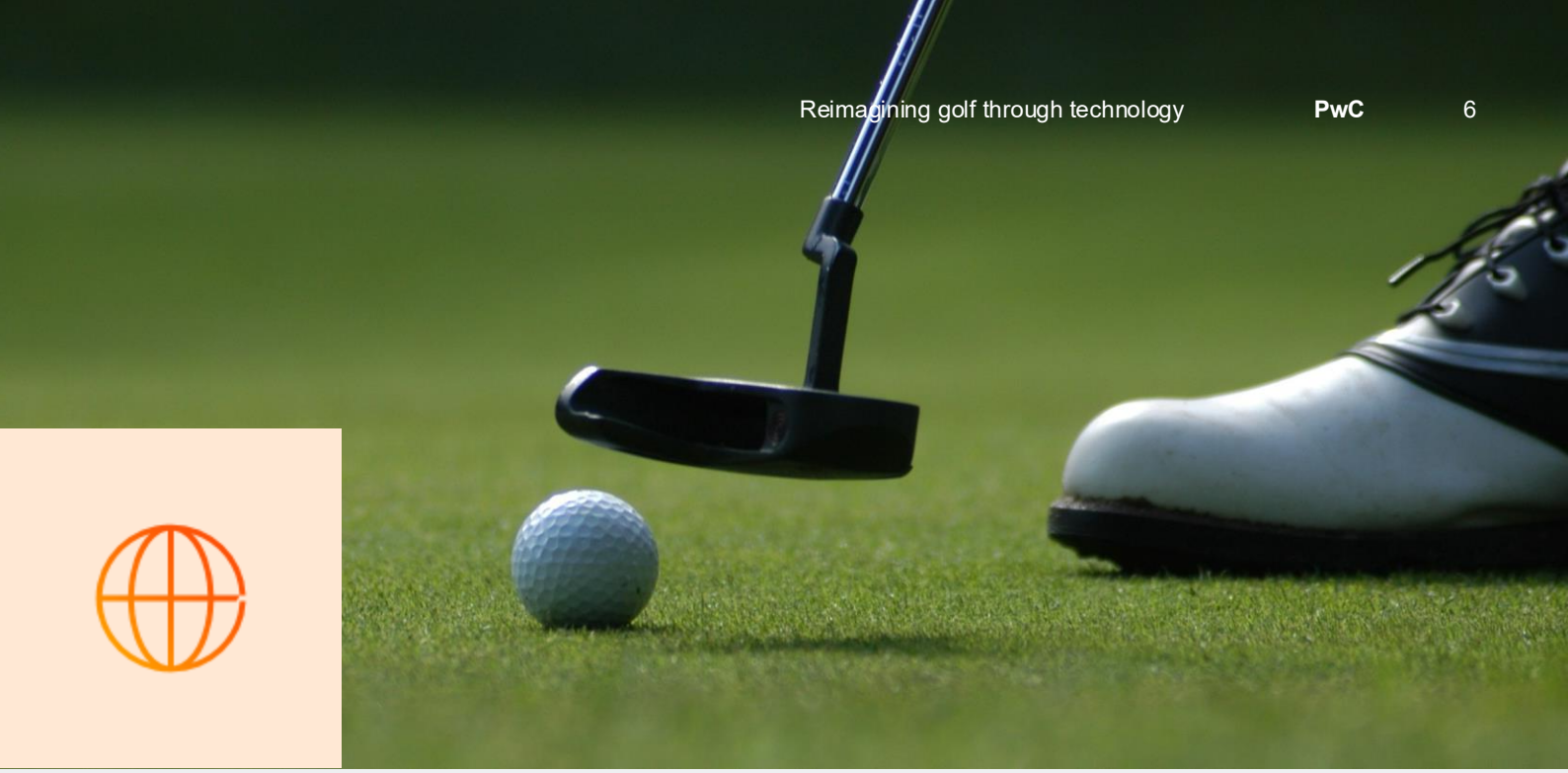
MENA as a global golf destination



Over the past two decades, golf has evolved from a niche pastime into a key pillar of MENA's sports tourism industry, fuelled by economic growth, modern infrastructure and government diversification efforts. With forecasts projecting a 15% growth in the regional golf market over the next decade, the region is poised to become a global hub for golf tourism, innovation and investment, offering a distinctive blend of tradition, luxury and technological advancement.[4]

Flagship venues such as Emirates Golf Club (UAE), Royal Golf Dar Es Salam (Morocco) and Royal Greens Golf (Saudi Arabia) have positioned the region as a premier golf destination. They are supported by major international tournaments including the DP World Tour Championship, Saudi International and LIV Golf.

Strong government backing – through initiatives like Saudi Arabia's Vision 2030 and Dubai's tourism strategy – is driving large-scale investment. Saudi Arabia has committed over US$100m to golf infrastructure, while Dubai's golf sector contributes around US$500m annually to its economy.[5] [6]

The region's golf tourism market generated about US$864m in 2024 and is projected to reach US$1.34bn by 2030 (CAGR 7.6%).[7] This growth is also boosting adjacent sectors including resorts, hospitality and training academies.

While golf's popularity continues to rise across the MENA region, the sport faces ongoing challenges. These include sustainability pressures and high operating costs. Developers are responding by turning to smart, eco-friendly solutions equipped with advanced technologies.

03

Key stakeholders

As golf technology evolves, its adoption depends on the diverse needs and priorities of multiple stakeholder groups.

The following are key stakeholders shaping technology adoption in golf:

Operations and venue managers

Oversee course and facility operations, balancing budgets, staff and resources while ensuring a seamless guest experience.

Grounds and facilities staff

Maintain turf, irrigation and infrastructure to ensure consistent playing conditions and course health.

Event and hospitality staff

Manage tournaments, F&B services and guest interactions for smooth event execution and high service quality.

Players

Professionals, amateurs and casual golfers seeking quality facilities, fair conditions and supportive technologies.

Fans and spectators

On-site and remote audiences looking for engaging, comfortable and accessible ways to watch and connect with the sport.

Sports broadcasting

Media professionals capturing, producing and distributing coverage, requiring technology for enhanced visuals, analytics and storytelling.

04

Foundational infrastructure technologies

Foundational golf technologies or 'enablers' form the digital backbone of golf operations, enabling seamless connectivity, security, integration and data management. Although largely invisible to players and guests, these technologies are vital for delivering reliability, scalability and a secure digital environment and operating behind the scenes to power every aspect of the facility. Modernisation efforts typically start by strengthening these core layers, creating the platform on which more advanced and visible innovations can flourish across the facility. Once foundations are in place, more advanced technologies can be implemented.

Key foundational technologies	Overview	Examples	Golf courses	Golf simulators and arenas	Golf entertainment centres
01 Network and connectivity solutions	The foundational network layer that ensures reliable communication and data exchange across all parts of a golf facility	Wi-fi systems	●	●	●
		Private 5G network	●	○	○
02 Cybersecurity solutions	Protective systems that safeguard digital operations by securing sensitive data and managing risks from potential threats	Firewalls and intrusion detection	●	●	●
		Identity and access management	●	●	●
03 Data integration and API infrastructure	The connective layer that enables different systems to work together seamlessly and ensures consistent data flows across operations	API gateways	●	●	●
		Data lakes	●	○	●
04 Hosting and compute infrastructure	The environment where digital applications run and data is processed, providing scalability, reliability and performance	Private cloud infrastructure	●	○	○
		Public cloud platforms	●	●	●
05 Supporting enterprise tools	The business and IT management platforms that streamline processes and enhance operational efficiency across the organisation	ERP systems	●	●	●
		IT service management platforms	●	●	●
06 Basic asset specific technologies	Core hardware and software that enable the basic operation and player interaction within each golf asset	Bay screens and displays	○	●	●
		Projectors and screens	○	●	○
		Entertainment lighting and AV systems	○	●	●

05

Asset facing advanced technologies

With the foundational infrastructure in place, asset-facing technologies are the visible innovations that shape how golf is played, practiced and enjoyed. These technologies vary across three main asset types:

01

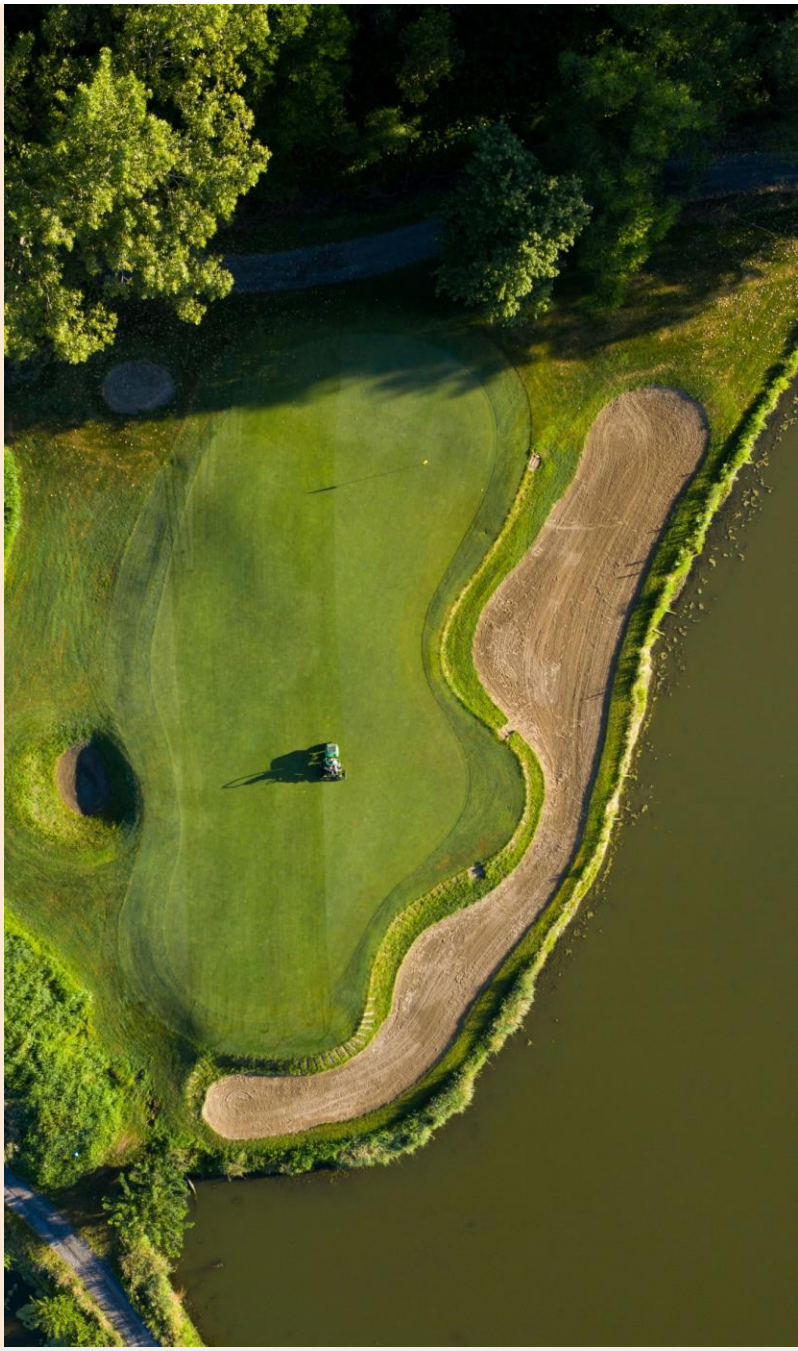
Golf courses, which use tech to support turf management, player services and events.

02

Training and simulations, which offer data-driven coaching through realistic indoor experiences.

03

Golf entertainment centres, which blend gamified golf with social features including food, music and digital engagement.



Each class leverages technology to enhance user experience and drive operational value. This section examines the technologies and use cases specific to each asset type.

5.1

Golf courses

The adoption of smart turf technologies and data-driven practices is transforming course maintenance, enabling clubs to cut water usage, reduce labour costs and improve turf health. These advancements are creating operational efficiencies and long-term savings for venues.

Value chain	Use cases
01 **Turf and course management**	• Autonomous mowing robots • Digital twin for course monitoring • Drone-based turf health imaging • Precision turf health management • Smart golf ball for course monitoring • Smart irrigation systems • Soil sensors for turf health monitoring • Weather-integrated irrigation control
02 **Facility and infra. operations**	• Automated golf ball collectors • Tournament management platform
03 **Golfer experience enhancement**	• Player route optimisation • Robotic golf trolleys • Smart golf carts • AI-enabled player performance analytics
04 **Access and commercial enablement**	• Customer Relationship Management (CRM) Platform for Golf • End-to-end club management platform • Golf dynamic pricing • Tee time marketplace
05 **Tournaments and broadcasting**	• AI broadcasting • Digital twin for event broadcasting • Drone based ball tracking • Spidercam broadcasting solution • VR broadcasting solutions • On-screen entertainment and leaderboards

01 Turf and course management

Autonomous mowing robotics

Robotic mowers automate turf maintenance with precise height control and uniform coverage, reducing labour and fuel costs. Royal Porthcawl Golf Club in Wales deployed Husqvarna's CEORA and Automower systems use satellite-guided technology to perform overnight mowing, improving scheduling, sustainability and ESG-compliance while freeing staff for higher-value tasks.[8]

Digital twin for course

Digital twin technology uses drone-based LiDAR to create virtual course models, helping turf managers optimise irrigation, drainage and long-term planning. Rock Creek Cattle Company Golf Course in Montana uses Turf Logic's system to improve water use to improve water distribution and streamline renovations with data-driven insights.[9]

Drone-based turf health imaging

Drones equipped with multispectral sensors monitor turf health in real time, enabling early detection of issues such as drought stress, disease and uneven irrigation coverage. Courses like Blackhawk and Valhalla use GreenSight's platform to reduce chemical use, optimise irrigation and build historical turf data for better decision-making.[10]

Precision turf health management

Precision systems like POGO Turf Pro collect real-time soil data to guide irrigation and nutrient application, reducing water use and manual labour. At Angel Park Golf Club in Las Vegas, this technology cut hand watering by 70% and extended aerification cycles from 30 days to 6-7 weeks, saving on labour and equipment costs while improving turf quality and operational efficiency.[11]

Smart golf ball for course monitoring

Smart golf balls like the USGA's GS3 capture key green metrics – firmness, speed, trueness and smoothness – during roll tests. When integrated with digital platforms, they enable predictive maintenance and fine-tune mowing and fertilisation schedules. This data-driven approach translates into measurable savings in fuel, equipment wear and overall maintenance costs.[12]

Smart irrigation systems

These optimise water use through sensors and software, improving efficiency, sustainability and control. In 2025, St Andrews Links Trust in Scotland invested €10.5m with Toro to upgrade its system, adding 700 sprinkler points for precise water delivery. The project reduced waste, shifted to sustainable sources like rainwater and boreholes and enhanced maintenance by reducing manual labour and improving staff control.[13]

Soil sensors for turf health monitoring

Embedded soil sensors enable precise irrigation and soil management by continuously tracking moisture, salinity and temperature. At Fairmont Grand Del Mar in San Deigo, GroundWorx sensors helped save 24m gallons and US$135,000 in 2021, a 29% reduction in water costs. This technology improves turf health, reduces the need for re-sodding and excess fertiliser, cuts utility expenses through optimised irrigation cycles and automates monitoring—freeing staff for more strategic turf care.[14]

Weather-integrated irrigation control

Evapotranspiration (ET) irrigation systems automate scheduling using real-time weather and soil data. At Hop Meadow Country Club in Connecticut, Rain Bird's setup saved 18,000 gallons on one green. By adjusting run-times based on ET, rainfall and temperature, it reduced energy and labour costs, maintained optimal turf quality and freed staff from manual monitoring.[15]

02 Facility and infrastructure operations

Automated golf ball collectors

Robotic golf ball collectors automate range cleanup with GPS-guided routes and onboard storage, reducing manual labour and improving efficiency. In the UK, Kingsway Royston Golf Centre's adoption of the Echo RP-1250 cut daily clearance time from four hours to one, reallocated 20 staff hours per week and maintained reliable performance in all weathers, enhancing guest experience and operational productivity.[16]

Tournament management platform

Digital tournament platforms streamline registration, tee times, scoring and communication reducing manual workload and boosting event capacity. The USGA adopted Golf Genius to modernise operations with cloud-based tools, enabling live scoring, flexible formats and error-free data management – driving efficiency, engagement and revenue growth.[17]

03 Golfer experience enhancement

Player route optimisation systems

GPS-enabled cart tracking and real-time analytics improve course flow by reducing slow play and optimising player movement. Erin Hills in Cape Town used Tagmarshal's system to cut round times by 17 minutes, generating US$115,000 in new revenue and increasing tee-time capacity, boosting both operational efficiency and player satisfaction.[18]

Robotic golf trolleys

Robotic golf trolleys offer a premium, hands-free walking experience by autonomously transporting golf bags across varied terrain. Guided by sensors and stabilisers, they enhance convenience, promote fitness and reduce reliance on caddies or pushcarts. At The Dunes Golf and Tennis Club in Florida , six Tempo Walk units featuring GPS yardage and integrated coolers boosted member engagement and daily usage.[19]

Smart golf carts

Smart golf carts enhance sustainability, mobility and operational efficiency through electric propulsion, lithium-ion batteries and GPS-enabled fleet management. At Ishikari Heigen Country Club in Japan, Yamaha's autonomous carts enhanced safety, reduced dispatch delays and increased member satisfaction – supporting more rounds with fewer carts and lowering maintenance needs.[20]

AI-enabled player performance

AI performance platforms analyse shot data, ball tracking and player stats to deliver real-time insights. At the 2024 Masters in the U.S., Augusta National used IBM's watsonx to provide predictive analytics, automate highlight creation and boost fan engagement – enhancing coaching, streamlining analysis and adding value across digital content and stakeholder touchpoints.[21]

04 Smarter access and commercial enablement

Customer relationship management (CRM) platform

CRM platforms centralise golfer data to personalise engagement and optimise revenue. Missouri Bluffs Golf Club's 2022 rollout boosted green fee revenue by 36%, expanded its database by 47% and shifted bookings to direct channels – reducing costs and increasing retention through targeted campaigns.[22]

End-to-end club management platform

End-to-end club management platforms unify golf, retail and hospitality operations through cloud-based systems. In Michigan, the Links at Bowen Lake uses Lightspeed to manage tee times, F&B, payroll and marketing in one platform – boosting efficiency, expanding outreach and increasing unique customers by 11.7%, with year-round revenue from simulator bays and dining.[23]

Golf dynamic pricing

Golf dynamic pricing software adjusts green fees in real-time based on demand, weather and competitor rates. Arizona's Coyote Lakes Golf Course implemented Sagacity Golf's platform to optimise pricing and tee time utilisation, achieving a 16% annual revenue increase, 35% growth in direct bookings and outperforming nearby competitors by 20%, filling underused tee times and reducing reliance on third-party channels.[24]

Tee time marketplace

Tee time marketplaces aggregate real-time availability from multiple courses, expanding reach and boosting bookings. ORIDA Hotel Golf & Leisure integrates GolfNow across three clubs, achieving a 700% increase in green fee revenue and a 1,067% rise in rounds booked. The platform improved visibility filled off-peak slots and enhanced cash flow through upfront payments and promotional tools.[25]

05 Tournaments and broadcasting

AI broadcasting	AI broadcasting automates highlight creation, commentary and multilingual narration resulting in scaling content and reducing production costs. At the 2021 Players Championship, the PGA Tour used WSC Sports' AI to deliver near real-time video clips for every shot via Tourcast. This enhanced fan engagement, broadened global accessibility and earned a Sports Emmy nomination for digital innovation.[26]
Digital twin for event broadcasting	Digital twins recreate golf courses in high fidelity using LiDAR and ball-tracking data, enabling real-time shot visualisation and stats. For the 150th Open, The R&A and NTT Data's ShotView tracked over 32,000 shots with 2cm accuracy, tripled online engagement and drew up to 200,000 spectators, enhancing fan immersion.[27]
Drone based ball tracking	At the 2025 RBC Canadian Open, the PGA TOUR debuted Drone AR Smart Tracing, enabling dynamic shot replays and real-time tracking[28]. The Emmy-winning technology reduced production costs, enhanced viewer engagement and opened new sponsorship opportunities through branded AR overlays.[29]
Spidercam broadcasting solution	Spidercam delivers dynamic aerial footage using a wire-suspended camera rig, enhancing golf broadcasts with cinematic views and crowd atmosphere. Debuted at the 2025 Open Championship at Royal Portrush, it captured the 18th green in real time, elevating viewer experience and positioning golf alongside global sports in broadcast innovation – while opening new sponsorship and media revenue opportunities.[30]
VR broadcasting	VR broadcasting uses 360° cameras and high-speed networks to stream immersive content, allowing fans to explore the course remotely. At the US Open at Pebble Beach, the USGA and Cisco deployed VR via the official app, supported by Wi-Fi 6 and OTT streaming. The initiative boosted fan engagement, tracked over 50,000 shots and introduced new revenue streams through premium content and branded activations.[31]
On-screen entertainment and leaderboards	High-resolution LED displays deliver real-time scoring, highlights and leaderboards, enhancing on-site fan engagement and dwell time. At the 2024 Open Championship, the R&A introduced the 20-metre NTT DATA Wall, which processed over 32,000 shots with near-instant updates.[32] It became a central hub for spectators, boosting experience, reducing scoreboard costs and creating new sponsorship opportunities.

5.2

Training and simulations

The growth of digital training aids and simulation technology has added a new dimension to the game, offering players access to advanced and fun ways to improve and creating a new revenue stream for venues and golf clubs.

Value chain	Use cases
01 **Infrastructure and setup**	• Augmented reality putting platform • Pressure plates for player analysis
02 **Gameplay simulation and training**	• Golf simulation software • Launch monitors • Adjustable putting and swing platforms
03 **Venue operations and access**	• Golf simulator management and dynamic pricing platform
04 **Player analytics and insights**	• Ultrasound putting analysis • Advanced swing analysis • Coaching and performance analysis platforms (incl. swing analysis)

01 Infrastructure and setup

Augmented reality putting platform

AR putting overlays digital visuals on real surfaces to guide aim and slope in real time. North Carolina based Tempo Golf Club's 2025 use of PuttView turned practice into a gamified experience, improving coaching outcomes and boosting member engagement. Premium sessions and expanded short-game use attracted more visitors and facility revenue.[33] [34]

Pressure plates for player analysis

Pressure plates track weight distribution and balance during swings, offering biomechanical insights. In Ireland, the Golf Academy's use of BodiTrak mats enabled portable, real-time analysis across varied terrains, improving lesson quality and player's performance through measurable feedback.[35] [36]

02 Gameplay simulation and training

Golf simulation software

Golf simulation software enables year-round play and instruction by replicating real courses indoors. North Jersey Country Club's TruGolf Vista 12 setup with E6 CONNECT turned off-season downtime into revenue through lessons and leagues. With a total of 8.1m users in 2024[37] and a projected market growth from US$1.61bn in 2025 to US$5.2bn by 2033, simulators are becoming a key driver of engagement and profitability in golf.[38]

Launch monitors

Launch monitors track ball and club data for precise performance analysis. Net Par's Trackman rollout across six centres enabled year-round instruction and tournaments. With 80% of the world's top 30 courses using them, launch monitors are now essential for player development and customer engagement.[39]

Adjustable putting and swing platforms

Adjustable platforms simulate uneven lies and slope variations indoors. The Belfry's PGA Academy in Scotland implemented Swing Stage and Green Stage with up to 12% gradients and billions of putting variations, improving lesson quality, fitting accuracy and operational efficiency.[40]

03 Venue operations and access

Golf simulator management and dynamic pricing platform

Management platforms centralise bookings, pricing and analytics to optimise bay use. In Toronto, Transition Golf's system introduced dynamic pricing and weekly performance insights, improving booking distribution and increasing revenue during peak demand.[41]

04 Player analytics and insights

Ultrasound putting analysis

Ultrasound systems track putter and ball dynamics with millimetre precision. The Golf Academy's SAM PuttLab in Illinois captured 28 stroke parameters, offering tour-level feedback that improved alignment, tempo and roll consistency – supporting premium packages and repeat visits.[42]

Advanced swing analysis

Motion capture systems analyse body movement without wearables, delivering real-time visual feedback. GolfTec's Optimotion system uses AI and 14m swing data points to guide immediate adjustments, enhancing instruction and long-term engagement.[43]

Coaching and performance analysis platforms (incl. swing analysis)

Digital coaching platforms integrate swing data, structured lessons and remote feedback. Florida-based Fleming Island Golf Club's Toptracer Coach enabled tiered subscriptions boosting lesson quality, engagement and repeat business.[44]

5.3

Golf entertainment centres

In recent years golf entertainment venues have grown in popularity, breaking down traditional barriers to entry and attracted a new audience looking for casual fun rather than formality. Today, young golfers are embracing technology and new formats to enhance their game and overall experience.

Value chain	Use cases
01 **Venue operations and guest access**	• Bay management • Booking systems • Integrated F&B and point-of-sale systems
02 **Engagement and loyalty**	• Mobile app • Digital displays
03 **Gameplay and experience delivery**	• Gamified scoring systems • Ball tracking systems • Automated golf ball dispenser • RFID balls

01 Venue operations and guest access

Bay management

Smart-Bay management systems optimise guest flow and maximise revenue per square foot. Topgolf's popular inventory engine (PIE) system automated scheduling and reduced idle time, boosting efficiency and guest satisfaction without expanding infrastructure.[45]

Booking systems

Cloud-based booking platforms streamline reservations and event scheduling, reducing idle time and unlocking new revenue. Topgolf's BookNow system boosted utilisation and group bookings through automated guest assignment and flexible payments. With the global tee time platform market projected to grow from US$1.35bn in 2024 to US$3.09bn by 2033, digital transformation is reshaping golf operations and customer engagement.[46]

Integrated F&B and point-of-sale systems

Unified hospitality systems connect food, beverage and retail ordering directly to gameplay environments and mobile devices, improving service speed and boosting sales. By linking front-of-house and kitchen operations, venues operate more efficiently and profitably. Topgolf's deployment of Toast Enterprise enabled contactless in-bay ordering, reduced wait times and drove revenue by improving spend per visit.[47] [48]

02 Engagement and loyalty

Mobile app

Mobile apps centralise access to bookings, memberships and rewards, enhancing convenience and customer loyalty. By integrating gameplay data and digital wallets, venues deliver personalised offers and frictionless experiences. Topgolf's mobile app increased repeat visits and engagement by syncing player history with targeted promotions and bonus gameplay.[49]

Digital displays

Commercial-grade digital displays deliver synchronised, high-resolution content that boosts engagement, sales and brand identity. Topgolf's upgrade to LG webOS signage created immersive environments, increased F&B revenue and simplified content management while reducing long-term replacement costs and future-proofing infrastructure.[50]

03 Gameplay and experience delivery

Gamified scoring systems

Gamified scoring formats transform ball-tracking data into interactive challenges that make golf more fun and accessible. By lowering skill barriers and introducing competitive play, venues attract broader audiences and increase dwell time. Topgolf's Toptracer-powered games like Angry Birds and Closest to the Hole boosted engagement and revenue through playful, branded experiences.[51] [52]

Ball tracking systems

Ball-tracking technologies provide real-time shot data for both training and entertainment, enhancing gameplay accuracy and unlocking premium offerings. By supporting virtual courses and performance analytics, venues attract and retain serious golfers as well as enhance customer satisfaction.[53] Drive Shack's use of TrackMan Range improved training outcomes and expanded gameplay options.[54]

Automated golf ball dispenser

Automated golf ball dispensers streamline delivery to hitting bays, reduce staff workload and support flexible pricing. Topgolf's system, developed with IN2 Innovation, added real-time swing feedback and improved operational efficiency. With speeds of 100 balls in 12 seconds[55] and a market projected to grow from US$1.1bn in 2023 to US$1.9bn by 2032 growing at a CAGR of 6.2%, dispensers are driving innovation and sustainability in golf facilities.[56]

Radio frequency identification (RIFD) balls

RFID-enabled golf balls automate scoring and enhance gameplay by linking each shot to a player profile. Used by Topgolf with Impinj chips, this technology powers immersive experiences while reducing search time by up to 80%, improving pace of play and supporting loyalty programmes. With 300m balls lost annually in the U.S., RFID offers a scalable solution for both entertainment and operational efficiency.[57]

06

Challenges and concerns

While the benefits of emerging technologies in golf course management are increasingly evident, it is equally important to recognise and proactively address potential challenges to ensure successful implementation and long-term value:

Regulatory compliance

Technological solutions, whether aerial, ground-based, or digital, must operate within established regulatory frameworks. This includes adherence to environmental (such as restrictions on drone flights in certain areas), safety regulations by ensuring machinery meets operational safety codes, safety and data governance standards. For example, when collecting and processing player or visitor data through smart applications, organisations must comply with data protection laws, such as Saudi's Personal Data Protection Law (PDPL).

Upfront investment

Adopting advanced technologies often requires an initial financial commitment. However, the long-term gains in operational efficiency, resource optimisation and player experience typically outweigh these costs. Flexible service models and scalable solutions are available to accommodate courses of varying sizes and budgets, supported by training programmes that maximise return on investment.

Environmental dependencies

Many technologies, especially those involving outdoor operations, are sensitive to weather conditions such as high temperatures, or humidity providers mitigate these risks through adaptive scheduling, hardware and alternative data collection methods, including historical datasets and ground-based systems, ensuring continuity in performance monitoring and planning.

Privacy and ethical use

As technology becomes more integrated into golf environments, safeguarding privacy is paramount. Ethical use protocols and transparent data policies help protect the privacy of players, staff and neighbouring communities. Clear operational guidelines and stakeholder engagement foster trust and accountability. Responsible and strategic adoption ensures that these tools not only deliver measurable value but also align with ethical standards and long-term goals across diverse golfing environments.

07

Six-point action agenda for course operators and developers

1

Plan digital from the ground up

Embed IoT networks, data platforms and sensor infrastructure at the design stage, not after construction. Building digital capability in from day one improves operational efficiency, reduces retrofit costs and enables real-time decision-making throughout the asset's lifecycle.

2

Optimise every drop of water

Adopt evapotranspiration-based irrigation, soil-moisture monitoring and reclaimed-water systems to target at least a 25-30% reduction in annual water use. In hot, dry climates, an 18-hole golf course consumes about 235m gallons of water per year – roughly the same as 3,000 households.[58] Reducing this volume strengthens both sustainability performance and financial resilience. Publicly reporting savings enhances credibility with regulators and investors.

4

Diversify revenue through new formats

Introduce simulators, indoor practice bays and golf-entertainment venues to generate year-round income and attract new audiences, without increasing irrigated land. These experiences extend the brand beyond the course – which is important in hotter summer months – and build community engagement.

3

Redefine the player journey

Connect tee-time management, loyalty apps and on-course spending through integrated CRM systems. Personalisation, data-driven offers and dynamic pricing can lift both direct bookings and spend per visitor.

5

Use data to anticipate and extend asset life

Deploy digital-twin modelling to forecast irrigation demand, plan maintenance and optimise energy loads. Predictive insight helps prevent downtime and extends the lifespan of turf, pumps and equipment.

6

Upskill the workforce

Invest in staff training on data analytics, sensor calibration and digital-equipment maintenance. Partnerships with suppliers and vocational institutes can help establish a regional talent pipeline for "smart-course management".

The rise of golf in the MENA region reflects a broader transformation in how the region approaches sports, tourism and innovation. This momentum is not only reshaping the regional sports landscape but also creating new opportunities for global stakeholders from technology providers and investors to hospitality operators and event organisers. The integration of smart systems, immersive fan experiences and data-driven operations positions MENA as a forward-thinking market ready to embrace the future of golf.

Technology is transforming golf into a connected, data-driven experience. For the MENA region, it's an opportunity to lead the next chapter of the sport – creating golf that is smarter, more sustainable and more inclusive, while setting a global benchmark for innovation and growth.

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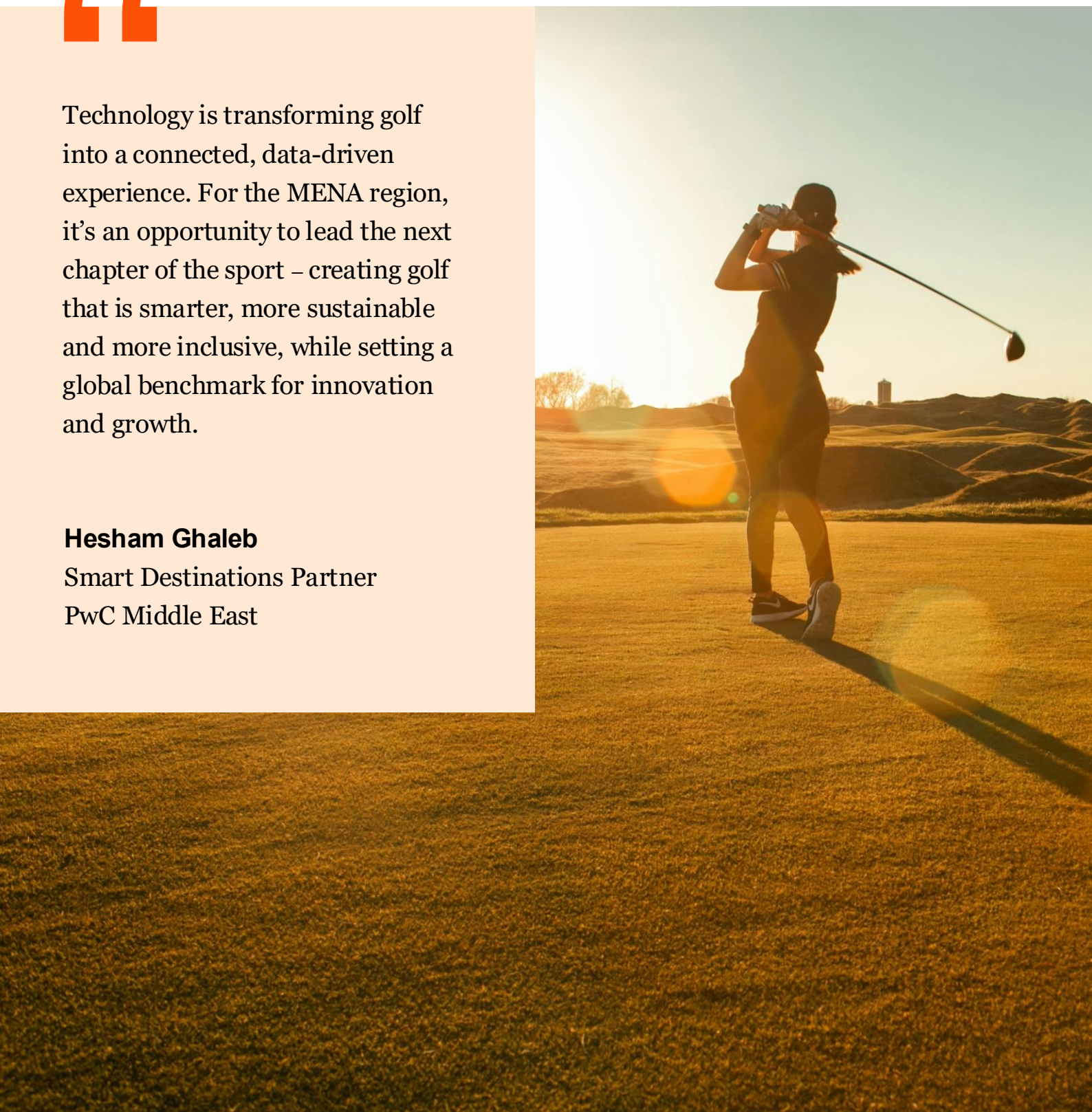

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