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By Yoav Dubinsky

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Acknowledgements

Abstract

This case study explores the role of sport-tech diplomacy through the Tokyo 2020 Olympic Games. The study discusses the research question: How do the intersections between sports, technology and diplomacy manifest through the Tokyo 2020 Olympic Games? Tokyo 2020 was originally designed to help with Japan's recovery from the 2011 Earthquake, Tsunami and Fukushima Daiichi Nuclear Disaster while celebrating Japanese traditions, and creative and innovative culture and technologies. The outbreak of COVID-19 that led to the postponement of the Olympics to 2021 and to Tokyo going in and out of states of emergency forced Japan to implement unprecedented restrictive guidelines and policies through innovative technologies to deliver the Games despite the challenges. Based on content analysis of official publications by the organizers and sources available to accredited media or the public this study identifies the intersections between sports, technology and public diplomacy in Tokyo 2020 through four primary areas: (a) public safety, (b) Games operations, (c) cultural diplomacy and (d) backlash. The study is significant as it expands the literature on the newly used concept sport-tech diplomacy in the context in the multidisciplinary fields of nation branding and country image and offers five lessons for scholars and practitioners on sport-tech diplomacy.

Introduction

The purpose of this case study is to explore and discuss the role of sport-tech diplomacy (Dubinsky, 2022a)—manifestations of sports, technology and diplomacy—through the Tokyo 2020 Olympic Games. One of the traditional segments in the protocol of each closing ceremony of the Olympic Games is the passing of the Olympic flag to the next host city. Fans attending the closing ceremony of the Rio de Janeiro 2016 Olympic Games or watching the broadcast around the world received Shinzo Abe with laughter and cheer, as the prime minister of Japan arose in the Maracanã Stadium through a green pipe, dressed as the beloved Nintendo videogame character Super Mario (Olympics, 2016). The hilarious entrance followed a short promotion video of the Tokyo 2020 Olympic Games, featuring iconic Japanese landmarks, cultural figures and signs. For examples, the Tokyo skyline, Tokyo Tower, the bullet train, traditional Japanese sports and venues such as judo and the Nippon Budokan, kimonos, and recognizable anime and manga cartoons, including Pac-Man, Doraemon, Hello Kitty and Captain Tsubasa. These all led to a video of the prime minister of Japan turning into Super Mario and digging a tunnel from Tokyo to Rio to reach the Maracanã Stadium on time with the world-recognizable music theme of the game playing in the background. Abe's entrance was followed by a Japanese performance in Rio, which also introduced karate and skateboarding making their Olympic debuts in Tokyo. Thus, innovation, technology, cultural creativity, combining heritage and the modern, music, dance and humor were at the core of Japan's nation branding and country image strategies heading toward Tokyo 2020.

The original plan for Tokyo 2020 was very functional though. Tokyo 2020 was originally branded as "The Recovery and Reconstruction Games" (Dubinsky, 2022a), using the

Olympic Games to show how Japan and Tokyo recovered from the triangular disasters of the 2011 earthquake, tsunami and Fukushima Daiichi nuclear disasters. In the bid presentation, Her Imperial Highness Princess Takamado and former Prime Minister Abe were among the people who presented that vision to the International Olympic Committee (IOC) members (Olympics, 2013). Recovery, sustainability, long-term planning, high-level technologies, integration of heritage and the modern, digitalization and community-orientation were at the heart of the planning (Dubinsky, 2022a; Kassens-Noor & Fukushige, 2018). That narrative changed following the outbreak of the coronavirus, as in March 2020 Abe announced the postponement of the Games, framing the goal as the world coming together to overcome the pandemic (Dubinsky, 2022a). During the year of postponement, Japan and Tokyo went constantly in and out of states of emergency, leading the organizing committee to add restrictions on accredited stakeholders planning to attend the Games and eventually banning international fans and even locals to attend the competitions. Thus, the new narrative of the Games, as expressed by IOC President Thomas Bach, was for the athletes to fulfill their Olympic dreams (Athlete 365, 2021). Nation branding attempts of Japan became secondary at best.

Being a technological powerhouse, since winning the bid and until the outbreak of the COVID-19 pandemic, the Japanese promoted Tokyo 2020 through video games, animated television series, and other technologies and innovations associated with its culture. Yet with the hit of the pandemic, such feel-good initiatives became secondary to health concerns, economic pressure and practical logistic needs. The research question the study discusses is: How do the intersections between sports, technology and diplomacy manifest through the Tokyo 2020 Olympic Games? Nation branding is a multidisciplinary field,

researched through product-country-image and tourism-destination-image lenses from business management and marketing, public diplomacy and soft power from political science and international relations, national identity from social psychology, and public relations and advertising from communications (Buhmann & Ingenhoff, 2015; Fan, 2010). This case study explores and analyzes the manifestations of sport-tech diplomacy through lenses from nation branding (Fan, 2010) and one of its outcomes: country image (Buhmann & Ingenhoff, 2015). In this study, after explaining the term sport-tech diplomacy and how it manifests through the Olympic Games, I review the background of the branding of Japan through the Olympics. I explore how the intersections between sports, technology and diplomacy manifested in Tokyo 2020 and suggest five lessons for practitioners and scholars to consider.

Sport-Tech Diplomacy and the Olympic Games

The term sport-tech diplomacy refers to the use of sports-related technologies for nation branding and public diplomacy purposes (Dubinsky, 2022b). The sport-tech ecosystem is large, diverse, and rapidly growing and expanding (Dubinsky, 2022b; Frevel et al, 2020). There are different classifications of sport-tech. Frevel, Schmidt, Beiderbeck, Penkert and Subirana (2020) analyzed the taxonomy of sport-tech and classified the different technologies based on the user angle and the tech angle. They (Frevel et al, 2020) categorized the technologies in a matrix based on (a) activity and performance, which includes wearables and equipment, performance tracking and coaching, and preparations, (b) fans and content, which includes news and content, fan experience and social platforms, and fantasy sports and betting, and (c) management and organization, which includes organizations and venues, and media and commercial partners. The international

sport-tech hub Colosseum Sport classifies the "sport-tech map" (Colosseum, 2020) based on technologies related to (a) athlete development, (b) fan engagement, (c) smart stadium, (d) health and fitness, (e) gaming and esports, and (f) media and broadcasting. Due to sports' global problem-solving nature, their worldwide popularity and their digital platforms of communications, the sport ecosystem fosters collaborations and interactions between people and communities regardless of national borders (Kelly, 2021; Dubinsky, 2022b).

When analyzing Israel's use of sports for nation branding and public diplomacy and identifying the branding attempts of Israel as a startup nation, Dubinsky (2021; 2022b) identified how different Israeli stakeholders recognize the potential of sport-tech to showcase Israel through the lenses of innovation and creativity—a tactic aligned with some of the branding attempts of bypassing a distancing and polarizing armed dispute. Regardless of political or partisan affiliation, the Israeli government, Israeli companies and Israeli private citizens all saw strategic value in associating the country as a hub for technological innovations, including through sports (Dubinsky, 2022b). Regardless of positionality toward the Israeli-Arab dispute, international organizations have been adopting such technologies that strengthen their business and collaborations with Israeli stakeholders. Of course, the use of sports and technologies does not apply only to Israel or to countries going through conflicts. Murray, Birt and Blackmore (2020) used the term "esports diplomacy" when discussing the international framework of one of the fastest-growing sports-related fields. While esports is growing into an over $1 billion industry, rapidly gaining popularity in Asia, Europe and North America, being adopted by sponsors and traditional professional sports leagues, and its potential is being recognized by the IOC (Hallman & Giel, 2018; International Olympic Committee, 2021; Murray, Brit,

& Blackmore, 2020), there are also concerns about adding esports as a medal event to the Olympic program due to the questionable physical activity nature of video gaming. In 2021, the IOC published its new strategic roadmap Agenda 2020+5 (International Olympic Committee, 2021a), in which one of the five identified goals and trends is digitalization and one of the 15 recommendations is to "encourage the development of virtual sports and further engage with video gaming communities" (p. 22). Murray, Brit and Blackmore (2020) use "esports diplomacy" to suggest that diplomatic skills can be applied to the esports battlefield, including negotiating between different stakeholders such as the IOC, governing bodies and governments. Thus, the term sport-tech diplomacy is an umbrella term that includes the use of a wide variety of sport-related technologies and for diplomatic purposes a wide variety of domestic and foreign stakeholders. Kelly (2021), who also researches global impacts of esports and gamming, defines sport-tech diplomacy as the "use of sports innovation and technology in the context of national image and diplomacy." Thus, both Dubinsky (2022b) and Kelly (2021) argue that the global and diverse nature of the sport-tech ecosystem embody soft power and diplomatic opportunities for countries, people and organizations including in the context of the Olympics.

Going back to the Greek city-states in Ancient Olympia, people, places and communities have been using athletic competitions to improve their images and achieve social, political and economic goals (Dubinsky 2019; Murray, 2018). As of the 21st century, almost every country sees functional or symbolic value in taking part in the Olympic Games and having their symbols shown to international audiences, as over 200 delegations—representing over 200 countries and territories—march every four years in the opening ceremony, participate in the competitions (Dubinsky, 2022a) and total more than the officially recognized states in the United

Nations. Throughout the history of the modern Olympic Games, countries, governments and other stakeholders used the event as a platform to try and achieve political goals. Some of the most blunt manifestations of geopolitics and use of the Olympic Games for public diplomacy purposes were (a) Adolf Hitler trying to show the German people and the world how structural and functional Germany could be under the governance of the Nazi Regime during the Berlin 1936 Olympic Games, (b) the U.S. leading a 60-countries boycott of the Moscow 1980 Olympic Games following the Soviet Union's (USSR) invasion of Afghanistan, (c) the retaliation of the USSR and its allies boycotting the Los Angeles 1984 Olympic Games, and of course (d) the Munich massacre terror attack in which Palestinian terrorists kidnapped and murdered 11 Israeli athletes, coaches and referees during the 1972 Olympic Games in Munich, West Germany (Dubinsky 2019; Murray, 2018; Murray & Pigman, 2014).

Hosting Olympic Games embody soft power (Nye, 2008) opportunities to improve a country's attractiveness on a global stage. Hosting tennis competitions in Wimbledon during London 2012 or beach volleyball at Copacabana Beach in Rio de Janeiro 2016 capitalize on the aura of the venues and locations (Dubinsky, 2020). The Spanish government used the 1992 Olympic Games to renovate Barcelona, leading the Catalan city to become one of the most touristy destinations in Europe (Davis, 2008). Host countries also use cultural diplomacy by sharing their history, music and art through the Olympics opening ceremony (Arning, 2013). Using the Bolshoi Ballet in Moscow 1980 or a giant Voldemort in London 2012 expose the rich culture of the hosts (Arning, 2013; Dubinsky, 2020). Another manifestation of cultural diplomacy is through the Cultural Olympiad (Garcia, 2021)— a series of exhibitions and performances organized in the host cities and countries around the Games.

As part of soft power and at times smart power, host and participating countries introduce modern technologies or innovations, which have multiple nation branding and public diplomacy implications. Part of the tactics of Hitler and Nazi Germany in the Berlin 1936 Olympic Games was using live national television broadcasting of the Olympics for the first time (International Olympic Committee, 2021b), using the innovative technologies as part of political propaganda (Billings, 2008). With the Olympic Games broadcasted globally and with broadcasting rights being the largest source of revenue for the IOC (International Olympic Committee, 2021b), organizing committees, sponsors and service providers used the Games to demonstrate some of the innovations (Billings, 2008) such as international color broadcasting in Mexico City 1968, live internet broadcasting in Athens 2004, or the role of social platforms in London 2012, which even received the nickname "The Twitter Olympics" (Dubinsky, 2020). From a people-to-people diplomacy perspective, one of the outcomes of the technological development of broadcasting was the rise of activism and of pressure groups trying to capitalize on the exposure of the Games to send social and political messages, as Tommie Smith and John Carlos did in Mexico City when protesting racism in America on the podium. From a corporate diplomacy perspective, sponsors also play a role in showing the technological advancements of the hosting country. Los Angeles used private sponsors to fund the 1984 Olympic Games, which led to the creation of the TOP (The Olympic Partner) Programme in 1985 in which private companies, mostly American at first, became financial partners of the IOC and led to the abolishment of amateurism and to capitalization of the Olympic Movement. Chinese tech company Lenovo joined the IOC's TOP Programme as a worldwide partner before the Beijing 2008 Olympic Games, designing the torch that was used in the torch relay and providing tech services during the competitions in China (Davis, 2008). China spent over 40 billion dollars on hosting

the 2008 Olympic Games to show a functional and advanced country (Dubinsky, 2020). Unsustainable hosting practices by authoritarian regimes are commonly framed as sports-washing (Dubinsky 2022a). There is no shortage of examples of backlash on unsustainable hosting, as seen with Montreal 1976, leaving the people of Quebec in decades of financial debts or Brazil, criticized for not achieving its sustainable goals before the Rio de Janeiro 2016 Olympic Games (Boykoff, 2016; Zimbalist, 2017). There is a rapidly growing anti-Olympics movement, criticizing hosting countries and cities for sports-washing, green-washing and gentrification (Boykoff, 2016; Boykoff & Gaffney, 2020; Dubinsky 2022a) when hosting Olympic Games in unsustainable ways against the will and interest of their residents or to launder human rights violations. Anti-Olympics resistance has been globally spreading through efficient use of social media (NOlympics LA, n.d.), galvanizing communities around a shared cause, regardless of national borders. This is an example of digitalization of diplomacy (Manor, 2022), using new media platforms to shape worldviews of digital publics. Thus, while the term sport-tech diplomacy might be new (Dubinsky 2022b; Kelly, 2021), the use of technology through the Olympic Games for nation branding and public diplomacy is a well-known practice.

Japan, Nation Branding and the Olympics

Despite not participating in the Olympic Games until 1912 and not hosting the Games until 1964, Japan influenced the Olympics since the early stages of the Movement. Kano Jigoro, a physical educator and athlete, invented the sport of judo not just as a form of Japanese martial arts with a philosophy to perfect oneself and contribute to the world (Sato, 2013; Ueda, 2017). Jigoro was among the influencers behind Pierre de Coubertin's philosophy of Olympism. Jigoro became the first Asian member of the IOC in 1909 and led

the organization to choose Tokyo as the host of the 1940 Olympic Games. Thus, Japanese values and philosophies have been integrated into the Western-led Movement even before Japan competed or hosted Olympic Games. The Tokyo 1940 Olympics was supposed to be the first Games held outside of Europe and North America, but those Games were canceled due to World War II (Collins, 2012).

The war left Japan in ruins, hit by two nuclear bombs, demilitarized, held accountable for war crimes and in financial turmoil. Thus, when Tokyo got to host the Olympic Games in 1964, the government used the opportunity to reposition Japan's image to an innovative and technologically oriented country (Collins, 2012; Yoshimi, 2019). Japan used the 1964 Olympic Games to signal to the world "that Japan had emerged in the post-war era as a peaceful, cultural nation state and had shed its aggressive imperialist past" (Collins, 2012, p. 2247). Japan built the Nippon Budokan martial arts complex with architecture influenced by traditional temples over an Imperial Guard's base, including the innovative bullet train and used satellite broadcasting (Abel, 2021; International Olympic Committee, 2021b). Through the 1970s, 1980s and 1990s, Japan's influence continued to grow, including Sapporo hosting the Winter Olympic Games in 1972, Panasonic joining the TOP Programme in 1987 (International Olympic Committee, n.d.) and Nagano hosting the Winter Olympic Games in 1998. Thus, by the end of the 20th century, Japan established itself as a valuable member of the Olympic Movement, contributing to the philosophy behind it and to its technological advancement.

The beginning of the 21st century caught Japan in a new state of emergency: the 2011 earthquake and tsunami cost the lives of over 19,000 people and were followed by the Fukushima Daiichi nuclear disaster. The bid for the Tokyo 2020 Olympic Games focused primarily on the way Japan

would use the Games to reconstruct and recover from the disasters (Dubinsky 202a; Olympics, 2013). After failed Japanese bids for the 2008 Olympic Games and the 2016 Olympic Games, and with the support of Her Imperial Highness Princess Takamado and former Prime Minister Shinzo Abe addressing the IOC, in 2013 Tokyo was once again awarded the rights to host the Olympics in 2020, overcoming Istanbul and Madrid (Olympics, 2013). Japan strategically integrated technology in preparations and Games operations, including infrastructure, sustainability and urban development focusing on environmental technologies, transport technologies, sport and medical technologies, information and communication technology, and security and safety (Kassens-Noor & Fukushige, 2018). Until 2020, the preparations for the Games were progressing smoothly. While the Rio 2016 Olympic Games (Boykoff, 2016; Zimbalist, 2017) were highly criticized for lack of preparedness, all the facilities for Tokyo 2020 were ready on time. According to the segments in the Maracanã Stadium, Tokyo 2020 was going to be exciting, sustainable, tech-savvy, mixing heritage and modernity, and celebrating Japanese unique culture and humor (Olympics, 2016).

COVID-19 forced Japan to change its plans. In March 2020, following a domino effect of cancellations of sports events due to the spread of the coronavirus, the growing international criticism against the IOC and the Tokyo Organizing Committee of the 2020 Olympic Games (TOCOG) over the ongoing torch relay. Under the threat of delegations withdrawing from the Games, Japan and the IOC announced the postponement of Tokyo 2020. Following meetings with international governing bodies, sponsors, broadcasters, National Olympic Committees and other stakeholders, a new date for the opening ceremony was set: July 23, 2021 (Tokyo 2020, 2021a). The Tokyo 2020 Olympic Games were postponed by 364 days, keeping a similar schedule structure

to the original plan with few modifications. If the original branding of the Games was around Japan's recovery from the pandemic, the new branding aimed to celebrate the victory of humanity over the pandemic (Dubinsky, 2022a).

Japan was well-positioned to fight the coronavirus as it is an island that could control its borders, it is a highly advanced country, the government took the threats of the pandemic seriously and implemented measures early, there was already a mask-wearing culture, and there is a collectivist culture of following public regulations (Dubinsky, 2022a). Thus, originally there was optimism that Japan could meet the new task. Yet, Japan was behind on vaccinations. With limited effectiveness in controlling the pandemic and constantly going in and out of states of emergency, public opinion in Japan was against hosting the Games, and international stakeholders and doctors started to voice their concerns as well (Waldron, 2021). TOCOG and the IOC gradually added restrictions, banning international fans, publishing strict guidelines in multiple versions of playbooks for accredited stakeholders that included regular testing and monitoring (Tokyo 2020, 2021b) and eventually closing the Games to local Japanese spectators. Branding Tokyo 2020 as the world overcoming the pandemic together was no longer credible. So, to justify going on with the Games, IOC President Thomas Bach created a new narrative: that the significance of having the 2020 Olympic Games was for the athletes to fulfill their dreams (Athlete 365, 2021). Japan's branding plans, previous narratives, the will of the Japanese people, or exposing the country's innovative culture and technologies, were not the top priorities.

Methods

The research question that the case study discusses is: How do the intersections between sports, technology

and diplomacy manifest through the Tokyo 2020 Olympic Games? The study uses a similar data collection approach and methods used in a case study about nation branding and public diplomacy in Tokyo 2020 published in *Place Branding & Public Diplomacy* (Dubinsky, 2022a). In July and August 2021, I spent three weeks in Tokyo during the 2020 Olympic Games with press credentials granted by the organizing committee, having access to press-related publications available only to accredited media such as documents, online portals and recorded press conferences. This study is based on content analysis of sources accessible either to accredited media or to the public, including official publications and press releases by TOCOG and the IOC, online daily briefings and newsletters by the Tokyo Media Center, official websites, international coverage, published scholarship work, post-Games coverage and official reports, and other publicly available sources. For the analysis, I used topical coding when reviewing dozens of documents to identify how technology and diplomacy intersected during and around the Tokyo 2020 Olympic Games. Topical coding is commonly used in descriptive research (Saldaña, 2016) such as this one. It aims to explore the new concept sport-tech diplomacy and identify its manifestations. Any issues pertaining to nation branding and public diplomacy not directly or indirectly related to technology were not analyzed in this study. Technological developments in Japan not related to the Olympics were also not analyzed. The analysis only focused on technological manifestations related to the Olympic Games with diplomatic or nation branding implications. Based on the classified data, the study identified four themes that are discussed in the next sections.

Sport-Tech Diplomacy in Tokyo 2020

This section discusses the intersections between sports and technologies played in nation branding and public diplomacy during Tokyo 2020. Based on the analysis, the study identified four themes through which sport-tech diplomacy manifested in Tokyo 2020: (a) public safety, (b) Games operations, (c) cultural diplomacy and (d) backlash.

Public Safety

The outbreak of COVID-19 forced Japan to postpone the Tokyo 2020 Olympic Games to 2021 and implement health restrictions. The nature of COVID-19 as an air-transmitted virus also led Japan and TOCOG to use different technologies and innovations to try and contain the virus during the Games as thousands of athletes, media members, sponsors and other accredited Olympic stakeholders from over 200 countries came to Japan to take part in the Olympics. Before the Olympic Games, TOCOG published *The Playbooks* (Tokyo 2020, 2021b), explaining testing, tracing and isolation guidelines for accredited stakeholders such as athletes and officials, international federations, Olympic and Paralympic family, marketing partners, broadcasters, press and workforce. Not all public safety measures required innovative technologies as the organizers emphasized requirements of wearing masks, maintaining good hygiene, providing available hand sanitizing dispensers in every facility or keeping social distancing when possible. Yet, TOCOG also relied on a synchronized system of multi-applications for tracking and tracing positive cases (Tokyo 2020, 2021b). From two weeks before the Games and until leaving Japan, each accredited participant needed to monitor daily their temperature and report it directly or through the organization's COVID Liaison Officer (CLO) using the Infection Control Support System (ICON). Each

participant needed to have a smartphone with multiple monitoring applications. These include the Online Health and Check report App (OCHA), in which the health of each accredited participant was reported and was used to enter Japan, and the Contact Confirming App (COCOA), which enabled the organizing committee to trace each accredited participant and contact them in case they tested positive or were exposed to someone who tested positive. Prior to flying to Japan, accredited stakeholders needed to take two COVID-19 tests: they were tested once arriving to the airport and again either daily or every four days, according to their role in the Games. Of course, a positive test before departure meant missing the Tokyo 2020 Olympics, and positive tests or even being exposed to someone testing positive in Japan meant further isolations, quarantines, being transferred to a different facility or other measures according to the guidelines (Tokyo 2020, 2021b). The technological introduction of mobile applications and the reliance on all Olympic stakeholders having smartphones connected to the internet were essential for executing such monitoring and tracing policies.

Beyond mobile monitoring, TOCOG used technologies in other forms to combat COVID-19. To maintain social distancing, at the entrance of each Olympic venue the accreditation of each stakeholder was scanned using face recognition technology to authenticate the identity of the stakeholder, and the stakeholder's temperature was taken electronically by machines or by volunteers using non-contact devices (International Olympic Committee, 2021c). A record of 37.5°C or higher would require further testing and potential restrictions (Tokyo 2020, 2021b). With international and local fans not allowed to enter the Games, the stadiums were not full and had only accredited stakeholders such as media, athletes and delegations, volunteers, etc. This meant that TOCOG had more possibilities for social distancing in

the venues. Technological innovations supported physical distancing in press conferences by requiring journalists to scan a barcode, download a translation application and use personal headphones if they wanted to use the simultaneous services the organization provided. Overall, the IOC reported taking over 675,00 COVID-19 tests during the Games, having less than a 0.02% infection rate (Burke, 2021). Through the Tokyo 2020 Olympic and Paralympic Games, the Tokyo Media Center (TMC) sent emails with a daily newsletter providing information to accredited and non-accredited journalists about the Games and the state of Tokyo and Japan. According to TMC, while before the Games Tokyo had an infection rate of 1,359 new positive cases (TMC Newsletter, 2021a), by the end of the Olympics the number grew to over 4,000 (TMC Newsletter, 2021b) but went back to less than 2,000 by the end of the Paralympic Games (TMC Newsletter, 2022c). Thus, despite the pandemic limiting Japan's ability to use Tokyo 2020 for nation branding and public diplomacy purposes, by using technological innovations, TOCOG and Japanese authorities still managed to host the Olympic Games and bring international stakeholders together without further global spread of the virus.

Games Operations

The second theme focuses on the technologies and innovations used to make the Games happen, regardless of the coronavirus. Like in previous Olympics, Tokyo 2020 also introduced new media-related technologies and broadcasting innovations in the Olympic Games (Billing, 2008; International Olympic Committee, 2021). With fans not allowed to attend the Games, TOCOG and the IOC set the message "United by Emotions," digitally connecting global audiences to competitions (Dubinsky, 2022; International Olympic Committee, 2021d). The Olympic Broadcasting Services (OBS) also used new innovative technologies

(International Olympic Committee, 2021b) including new multi-camera usage resulting in live on-demand immersive 180° stereoscopic and 360° panoramic coverage in several sports, virtual 3D graphics in sport climbing, 3D athlete tracking in athletics, True View technologies in basketball, and Panasonic giving biometric data such as heart rate updates in archery (Duchêne & Inson, 2021). Other new technologies include higher definition broadcasting through UHD HDR production, remote productions, use of feeds to provide more content in more formats to offer over 9,500 hours of coverage, use of Cloud and virtualized workflows, and more orientation toward digital fan engagement and social media through strategic close-field locations enabling remote viewers to interact live in the event and athletes to connect with fans (Duchêne & Inson, 2021). According to the IOC, these technologies enabled OBS to operate on a much smaller scale than in Rio de Janeiro 2016, in a 30 percent smaller International Broadcasting Center (IBC) and with 27 percent fewer broadcasters (International Olympic Committee, 2021c). The innovative coverage led to over 3 billion people watching the Games, 28 billion digital video views and over 6 billion engagements through social media (International Olympic Committee, 2021d; 2021e). Several innovations in Tokyo 2020 came from the IOC's TOP Partners (International Olympic Committee, 2021c), who also provide services for the Games. The IOC classified the partners' technological contributions into five different categories: (a) mobility, which included Toyota providing autonomous vehicles and field support robots and Panasonic providing QR-based luggage transport, (b) infrastructure, which included, for example, Samsung providing 5G athletes' phones, (c) event operations, which included, for example, Alibaba providing Games analytics and Intel providing virtual reality training, (d) fan engagement, which included, for example, Omega providing real-time racking system, and (e) sustainability, which included, for example, P&G providing

recycled plastic waste podiums (International Olympic Committee, 2021c).

The connection between sustainability and innovation was integrated with the original planning of the Games going back to the bid process (Olympics, 2013). Located on the second floor, connecting the Main Press Center (MPC) and the IBC, the Sustainability Information Booth provided information about sustainable planning and practices at the Games (Tokyo 2020, 2021a). On the bottom floor of the MPC, "The Recovery and Reconstruction Games" (Tokyo 2020, 2021a) area included information, videos and brochures about how the Tokyo 2020 Games supported the reconstruction and recovery of Japan from the 2011 disasters. Beyond the pandemic and the 2011 disasters, the Games had multiple environmental challenges ranging from heatwaves to tropical storms that led to athletes retiring from their competitions, voicing health concerns, and postponing and rescheduling competitions (Dubinsky 2022; Fryer, 2021; Wang, 2021). Thus, despite sustainable efforts and implemented lessons from facing natural disasters, Japan continued to face climate and environmental challenges that innovative modern technologies could not prevent through Tokyo 2020.

Cultural Diplomacy

The third theme focuses on an extension component of the Olympics, in which countries try to use international exposure to brand themselves as culturally rich and attractive. Tokyo's segment in the closing ceremony of Rio 2016 indicated that technology is much integrated with Japanese popular culture through video games, anime and manga (Olympics, 2016). Yet, with the deadly impact of COVID-19 and the rising resistance in Japan against the Games, the ceremonies in Tokyo did not try to recreate the self humor of

a prime minster dressed as a video game character but were described by international media as "somber" (Dubinsky, 2022a). Creative segments included an exhibition of 1,824 drones creating the shape of Earth (Tokyo 2020, 2021c) and acting the pictograms—a reference to an innovative Japanese contribution to the Tokyo 1964 Olympic Games (Olympics, 2022a). The closing ceremony as well included technological innovations such as the "Fan Video Matrix" (Tokyo 2020, 2021d), showing people cheering virtually, and an augmented reality light show (Olympics, 2022b). Perhaps the biggest missed opportunity though was in relation to video gaming and esports. From the ceremony in Rio to the decorations at Narita airport (AFP, 2021), the characters of the Nintendo video game Super Mario were among the most visible symbols of Japanese culture. In fact, in 2019, Sega published the joint video game Mario & Sonic at the Olympic Games Tokyo 2020 (Nintendo, n.d.), featuring two of the most recognizable video game characters worldwide, by two of the most well-known Japanese brands: Nintendo and Sega. With the growing global popularity of esports and the commitment of the IOC to digitalization and video gaming as part of the organization's Agenda 2020+5 strategy (International Olympic Committee, 2021a), Tokyo 2020 seemed like an ideal opportunity to integrate them. Yet, the use was minimal. There were references to video gaming during the opening ceremony with the theme of Sonic playing during the introduction of the delegations, but Nintendo's characters and music were absent, including Mario (Draper, 2021). Despite limited use of esports during the Games, TMC emphasized that Japan and Tokyo are very much growing hubs for esports, referring to video gaming in Japan as a cultural asset and the need for infrastructure to make it as publicly available as basketball is in the U.S. or football is in Brazil (Tokyo Media Center, 2021). Beyond the ceremonies, the Games did include cultural exhibitions through venues with technological connections, used mascots robots and even used a robot with artificial

intelligence (AI) to demonstrate shooting skills during basketball games (International Olympic Committee, 2021d)

Another platform host countries use the Games to highlight their culture and history is through the Cultural Olympiad (Garcia, 201): a series of music, theatre, paintings and other performance art exhibitions and festivals taking place during and around the Olympic Games, not just in the host city but around the country. Due to the restrictions on locals and on accredited stakeholders, such opportunities were also limited. While the residents could not attend competitions, they could visit the Nippon Festival (IOC Media, 2022), which exposed Japanese culture. To engage international fans, Tokyo 2020 and the IOC added a new platform named "The Olympic Agora," a cultural hub engaging locals through physical exhibitions and international audiences virtually and digitally (IOC News, 2021a; 2021b). The concept of the Olympic Agora as a cultural hub that can engage audiences virtually continued in the Beijing 2022 Winter Olympic Games. The restrictions and mobile monitoring of accredited media as written in the *The Playbooks* (Tokyo 2020, 2021b) and the lack of operating tour companies limited TOCOG's opportunities to capitalize on the thousands of journalists covering the Games to expose Japan's attractiveness as a tourism destination. There was a Tokyo City Information booth providing tourism information about Tokyo and Japan on the second floor of High Street that connected the MPC and the IBC (Tokyo 2020, 2021a). From there, Japan Travel Bureau (JTB) offered limited Tokyo 2020 escorted and controlled tours for media representatives (JTB, 2021). The tours included a boat cruise around Tokyo, visiting museums or viewing famous landmarks such as the Shibuya Crossing. Therefore, despite the restrictions, there were limited attempts to display other parts of Tokyo outside Olympic venues.

Most Olympic Games also provide nation branding opportunities for non-hosting countries through Olympic Houses: rented venues in the host cities that countries use to host families and athletes, sponsors, other Olympic stakeholders, or to hold parties where they expose their own culture, music, products and food. Due to the lack of international fans, that was not the case in Tokyo 2020. There were other manifestations of sport-tech diplomacy by other countries though. Germany introduced its football (soccer) team (DFB-Junioren, 2021) through an animated video using characters influenced by the Japanese manga series *Captain Tsubasa*. The term sport-tech diplomacy (Dubinsky, 2022b) was discussed at first in the context of Israel and the attempts to brand the country as a startup nation, including through sports. Tokyo 2020 was the most successful Olympic Games for Israeli athletes, winning two gold medals and two bronze ones. Prior to Tokyo 2020, the Olympic Committee of Israel had scientific collaborations with the Elite Sport Unit, the Center for Sports Medicine and Research at Wingate Institute, the Weizman Institute of Science, HypnoCore and the Israel Meteorological Service to create strategies that would put athletes in the best positions to be successful, including through rapid adaptation to local time, anticipating climate challenges in Japan and taking precautions against COVID-19 (Epstein, 2021). Thus, despite the restrictions and limitations, some countries did find ways to use technologies to try to attract international recognition.

Backlash

The fourth theme categorized manifestations of sport-tech diplomacy through criticism and backlash against Tokyo 2020. The IOC published surveys that out of 10,680 respondents from 17 countries, 65% deemed Tokyo 2020 to have been a success, 60% expected Tokyo 2020 to have a

positive legacy, and out of 4,026 athletes around 80% rated the overall experience as "good" or higher (International Olympic Committee, 2021e). Yet, these positive numbers do not reflect the ongoing protests and criticism that surrounded the Games, including implications on sport-tech diplomacy. Even prior to the outbreak of COVID-19 there were local, national and international protests and criticism against the Games, accusing the organizing committee of greenwashing, corruption, unnecessary public spending, gentrification and police militarization (Boykoff & Gaffney, 2020). Critics focused on technological innovations TOCOG was proud of, arguing that after the Games the insertion of face-recognition technology and security robots "will be integrated into quotidian policing practices" (Boykoff & Gaffney, 2020, p. 14). After the outbreak of COVID-19 and leading to the Games, international media continuously cited surveys indicating that over 80% of citizens wanted the Games canceled or rescheduled again (Waldron, 2021; Wise, 2021). The IOC and international corporations including broadcasting rights holders and sponsors were scrutinized for putting financial pressure on the Japanese to hold the Games for their own profit (Wise, 2021) despite health warnings from medical doctors fearing an "Olympic variant" of the virus (Waldron, 2021). Due to the financial contribution of American broadcasting rights holder NBC and American TOP sponsors to the Olympic Movement, the criticism might even be interpreted as targeting American values and capitalism prevailing over morality. *The New York Times* even cited a survey stating that 52% of Americans think that Tokyo 2020 should happen, despite the strong feelings in Japan against the Games (Branch, 2021). The protests, criticism and demonstrations manifested in the torch relay, around the opening ceremony and closing ceremony, and were often mentioned by international media (Berkeley, 2021; Yee He Lee, 2021), even framing Tokyo 2020 as "The Anger Games" (Alt, 2021). Part of the ongoing criticism is fueled by anti-Olympics protest groups

protesting the existence of the Games in different bidding and hosting cities (NOlympics LA, n.d.). These groups used social media in an efficient way, leading to public resistance against the failed Boston bid for the 2024 Olympic Games and successfully continuing the momentum in bidding and hosting cities around the world (Kassens Noor, 2019; 2020; NOlympics LA, n.d.). The coverage of the backlash can also be seen as part of a rising wave of global activism resulting from financial, health, pollical and social crises, which also manifested in athletes' activism during the Games (Dubinsky, 2022a).

While the opposition to Tokyo 2020 did not cause the cancellation of the Games, it did lead to a few Japanese corporations associated with the Olympics taming down their involvement (Balmer, 2021). Panasonic and Toyota are two Japanese worldwide TOP sponsors (International Olympic Committee, 2021b) that enjoy category exclusivity in audio, TV, video equipment in vehicles, mobility support robots and mobility services, respectively. Both provided essential innovative technological services to the Games (International Olympic Committee, 2021d). Yet, prior to the Opening Ceremony, Toyota said it would not send its executives to the ceremony after the public was not allowed to attend the Games and scrapped a domestic advertising campaign due to the public's antipathy to the Games (Balmer, 2021). Panasonic, a TOP sponsor since the 1980s (International Olympic Committee, 2021b), did not hold their advertising during the Games but confirmed that the chief executive officer of Panasonic Corp. would not attend the ceremony (Balmer, 2021; Nakamichi & Furukawa, 2021). As mentioned, despite the role of the Nintendo character Mario in the promotion of Tokyo 2020 in Rio 2016, the video gaming company did not take part in the opening ceremony in Japan. International media reported that originally there was a planned segment that paid tribute to the one in Rio,

but Nintendo canceled it, allegedly due to public resistance against the Games (GameCentral, 2021; Thompson, 2021).

Backlash and criticism also came from accredited Olympic stakeholders, not just about the morality of the Games, but on the TOCOG's policies (Morgan, 2021). Journalists complained about the long waits at the airport, lack of efficiency, monitoring and the fear of being told to quarantine for 14 days even for just being in close contact with someone who tested positive (Kennedy, 2021; Morgan, 2021). The fear of hearing the phone ping with quarantine instructions (Ingle, 2021) and the overall conditions in Tokyo also contributed to the growing anxiety surrounding the Games (McLaughlin & Medaris, 2021). One of the most memorable moments in the competitions was when decorated American gymnast Simone Biles withdrew from the team final and canceled her participation in all but one of the individual finals she qualified for due to mental health reasons (Dubinsky, 2022a). While TOCOG and the IOC celebrated innovative sustainable policies such as having cardboard beds in the Olympic village and making the medals from recyclable material, the athletes complained about these beds being uncomfortable (McLaughlin, 2022) and medals were returned for replacement peeling (Aharoni, 2021). One of the innovative technological additions to the Games' operations was Toyota's self-driving "e-Palette" vehicles used to transport athletes and staff in the Olympic Village (Duffy, 2021), yet that service was suspended after one of the vehicles collided with a visually impaired Paralympic athlete (Duffy, 2021). Thus, the backlash emphasizes the limitations of sport-tech diplomacy and raises ethical questions of using technology for nation branding and public diplomacy, as even some policies, innovations and technologies the organizers took pride in for enabling Japan to host the Olympic Games during a pandemic were met with resistance and criticism.

Lessons on Nation Branding, Country Image and Sport-Tech Diplomacy from Tokyo 2020

Based on the identified themes on sport-tech diplomacy in Tokyo 2020, this study discusses five lessons scholars and practitioners should consider for using nation branding and country image lenses. According to Fan's (2010) nation branding model, product branding or country-of-origin, destination branding or tourism-destination-image, political branding known as public diplomacy and cultural branding referred to as national identity all influence the process of nation branding and the outcome of country image. Buhmann and Ingenhoff (2015) suggest a four-dimensional model to analyze a country's image through (a) a functional dimension, (b) a normative dimension, (c) an aesthetic dimension and (d) a sympathetic dimension. The functional dimension pertains to the capabilities of the country, including its political system, economy and infrastructure. The normative dimension of a country pertains to ethics, including the type of government, legislation, corruption, transparency, etc. The aesthetic dimension pertains to the cultural attractiveness of a country including the scenery, history, nightlife, natural beauty, etc. The sympathetic dimension captures the first three and pertains to the overall feelings toward a country. The first four lessons use the lenses of Buhmann and Ingenhoff's (2015) 4D country image model. The fifth lesson pertains to the multifaceted intersections between sports, technology and diplomacy through the process of nation branding as defined by Fan's (2010) framework.

1. Sport-Tech Diplomacy Has Merits and Limits

The functional dimension of a country pertains to its capabilities, economy, governance and infrastructure (Buhmann & Ingenhoff, 2015). Based on the analysis of

Tokyo 2020, Japan's functional dimension has mixed attributes. The bottom line is that during the COVID-19 pandemic the Japanese managed to deliver Olympic Games without having them canceled and without creating a new "Olympic variant" (Waldron, 2021). To do that, they used new innovative ways and relied on mobile applications, robots, artificial intelligence, new broadcasting technologies, etc. The technologies discussed under themes of *Public Safety and Games Operations* used in Tokyo enabled the organizing committee to maintain social distancing by implementing restricting policies relying on mobile applications and digital services to provide non-contact interactions. With the perspective of time, the Olympic Movement that knew cancellations only during the World Wars can look at Tokyo 2020 as another chapter in which humanity was challenged and managed to prevail, much thanks to the host's policies and capabilities. Japan also created a template of how countries can host Olympic Games during a pandemic, introducing *The Playbooks* as guidelines for accredited stakeholders. The IOC and the next organizing committee also used *Playbooks* with restrictive policies when China hosted the Beijing 2022 Winter Olympic Games less than six months later. On the other hand, Japan was constantly criticized for its failure to contain the pandemic, resulting in unprecedented restrictions on personal freedom, banning international and local fans, and facing protests and backlash before, during and after the Games. Furthermore, despite emphasizing innovations addressing the environment, heatwaves and tropical storms posed challenges for athletes and the organization during the Games (Dubinsky 2022; Fryer, 2021; Wang, 2021). Thus, from the functional dimension of Japan's image, the use of technologies enabled Japan to host Olympic Games during a global pandemic demonstrating advanced capabilities of the country, but some of the innovations that TOCOG took pride in were also the cause for criticism, either for not working or for causing physical or mental damage. Thus, the

functional merits and limitations of sport-tech diplomacy.

2. Sport-Tech Diplomacy Does Not Solve Moral Dilemmas

The normative dimension of a country pertains to ethics, forms of governance, legislation and national priorities (Buhmann & Ingenhoff, 2015). The early narratives of Tokyo 2020 focused on recovery and reconstruction, sustainability and the environment, with technological innovations used by the organization to enhance these objectives (Dubinsky, 2022a; International Olympic Committee, 2021d). Yet, as seen from the theme *Backlash*, the normative dimension of Japan was consistently scrutinized during Tokyo 2020 by residents and by international stakeholders for hosting the Games during a pandemic against the will of locals (Alt, 2022; Boykoff & Gaffney, 2020). As discussed in the previous lesson, the sport-tech ecosystem helped Japan get through the Games but had limitations in what TOCOG could achieve amid the pandemic. The anti-Olympics protests that targeted not just the Japanese authorities and organizers but also the IOC kept raising negative impacts that the Games had on local residences, including greenwashing, gentrification and public spending (Boykoff & Gaffney, 2020; NOlympics LA, n.d.). Sport-tech could not solve these problems. Furthermore, Tokyo 2020 also faced backlash on technological-oriented policies that the organizers took pride in on sustainability or non-contact safety practices. Sport-tech, like other forms of technologies, are practical operational tools, which embody ethical concerns, including risks of dehumanization. The way sport-tech diplomacy is used can contribute to the normative dimension of a country, but for it to be successful, policies need to be ethical and credible.

3. Sport-Tech Diplomacy Has Cultural Equity

The aesthetic dimension of a country's image pertains to its cultural attractiveness and its natural beauty (Buhmann & Ingenhoff, 2015). For TOCOG, promoting Japan and Tokyo as tourism destinations were not top priorities. Yet, as seen from the theme of *Cultural Diplomacy,* sport-tech can be immersed into a country's tourism destination image and its aesthetic component. Hosting countries often use the opening and closing ceremonies for soft power purposes (Arning, 2011). While Tokyo's ceremonies were not as celebratory as previous ones due to the tragic implications of the pandemic (Dubinsky, 2022a), they did include video gaming references and augmented reality technologies (Draper, 2021). Another example of using technology for cultural purposes through Tokyo 2020 can be seen in the digitalization of the Cultural Olympiad by virtually showcasing Japanese culture through the Olympic Agora (IOC News, 2021a; 202ab). Along with *Playbooks*, the Olympic Agora was also used in the next Olympic Games held a few months later in Beijing. The pictograms that were introduced in the Tokyo 1964 Olympic Games (Olympics, 2022a) became another Olympic tradition used by following Games. The innovative practices that were introduced or used in Tokyo 2020 add to Japan's aesthetic dimension and to the cultural legacy of the country in the Olympic Movement.

4. Successful Sport-Tech Diplomacy Requires Authenticity and Credibility

The sympathetic dimension of a country's image pertains to how the first three dimensions affect general feelings toward a country (Buhmann & Ingenhoff, 2015). This study does not aspire to measure a cause-and-effect attitude toward Japan's image. With that said, as seen from the theme *Backlash*, while the IOC was emphasizing

positive feelings by international audiences and athletes toward hosting the Tokyo 2020 Olympic Games during the pandemic (International Olympic Committee, 2021e), there was much local and international criticism against the decision, which impacted the framing of Japan through international media (Alt, 2022). Every Olympic Games are a holistic logistic challenge. With technological innovation part of Japanese culture and modern history, TOCOG integrated sport-tech in almost every level of Games planning and operations. Effective public diplomacy requires credibility (Cull, 2010), and the messages communicated by TOCOG, the IOC and Japanese authorities are not aligned with the reactions of the public and with international coverage (Alt, 2021; Waldron, 2021; Wise, 2021). Thus, regarding the sympathetic dimension of Japan's image, the authenticity and credibility of portraying positive feelings toward Tokyo 2020 are questionable, including about the use of sport-tech for nation branding and public diplomacy.

5. Sport-Tech Diplomacy Is Multifaceted and Growing

Nation branding and country image is multidisciplinary (Buhmann & Ingenhoff, 2015; Fan, 2010), constructed and influenced by different disciplines, including business management, political science and social sciences. The definitions and literature on sport-tech also illustrate a diverse area of sports-related technologies such as fan engagement, smart stadiums, health and fitness, gaming and esports, and media and broadcasting (Colosseum, 2020). According to Kassens-Noor and Fukushige (2018), the strategic planning of Tokyo 2020 integrated the use of environmental technologies, transport technologies, sport and medical technologies, information and communication technology, and technology for security and safety. As some of these classifications and strategies were identified in the discussion of technological use in Tokyo 2020, the definitions

of sport-tech in the context of nation branding and public diplomacy could perhaps be expanded to urban planning of mega-events as well. With the IOC strategically targeting digitalization through Agenda 2020+5 (International Olympic Committee, 2021a), the legacy of Tokyo 2020 might include technological advancements used in the Games and new forms of digitalized content such as the use of 3D broadcasting, virtual reality and augmented reality (Duchêne & Inson, 2021; Olympics, 2022b). Along with the growing popularity of esports and video gaming, it is likely to assume that sport-tech is bound to be an integral part of the future of the Olympic Movement.

The manifestation of sport-tech diplomacy in Tokyo 2020 adds to the construction of the term as multifaceted (Dubinsky, 2022b; Kelly, 2022). Public diplomacy refers to communications and interactions by governments, organizations and individuals with foreign publics that aim to achieve a more favorable image of the nation and foreign policy goals (Cull, 2010). This could be seen in Tokyo 2020's attempts to brand Japan as sustainable and as a country using the Games to show its recovery from natural disasters and a nuclear disaster, and for taking strict protective measures using digital technology and innovative practices to do so. Corporate diplomacy (Wang, 2006; White, 2015) and the alignment between companies' corporate goals and their role in a country's image could be seen in the decisions of Japanese companies to limit their participation in the opening ceremony (Balmer, 2021; Nakamichi & Furukawa, 2021) amid hurting the feelings of local communities who opposed the Games. Sport-tech diplomacy also manifested through people-to-people diplomacy (Handelman, 2012), through civic resistance by communities and the anti-Olympics protest groups using social media and digital platforms effectively to align their struggle with global social struggles and capture the attention of international

stakeholders, affecting how Japan and the IOC are framed (Alt, 2021; Dubinsky, 2022a; NOlympics LA, n.d.; Waldron, 2021). The role of export branding (Fan, 2010), also referred to as country-of-origin or product-country-image, was seen through the innovative technologies introduced in Tokyo 2020 by Japanese companies such as Panasonic and Toyota, adding to the history and legacy of Japanese leadership in technological service and support through the Olympic Movement (Abel, 2021; Collins, 2012; International Olympic Committee, 2021e). Place branding (Fan, 2010), also known as tourism destination image, was demonstrated through the role of video gaming, manga and animated television series in Japanese culture. It was not only used by Japan during the opening ceremony and before the Games but also by other countries such as Germany, which introduced its football team through animation resembling the Japanese series *Captain Tsubasa* (DFB-Junioren, 2021). Video games also had a role in Japanese national identity around Tokyo 2020, which Fan (2010) refers to as cultural branding, as demonstrated by former Prime Minister Shinzo Abe in the famous segment in Brazil, to Nintendo canceling a tribute to that segment in the Tokyo 2020 Opening Ceremony, allegedly due to negative public feelings toward the Games (GameCentral, 2021). With the next Olympic Games awarded to France, the U.S. and Australia (Dubinsky, 2022), democratic countries with organizations focusing on legacy, sustainability and culture, nation branding and public diplomacy are bound to be part of the future of the Olympic Movement, including through the multifaceted roles of sport-tech diplomacy.

Conclusion

This case study explored and discussed manifestations of sport-tech diplomacy through the Tokyo 2020 Olympic Games. Mobile applications for monitoring and tracing,

innovative non-contact security measures, electronic support for social distancing, new broadcasting technologies, robots, and other digital and virtual platforms enabled the Tokyo 2020 Olympic Games to take place. The Games were not ideal. They were not the recovery and reconstruction Games, did not show how humanity overcame the pandemic, and faced backlash from local and international stakeholders. Yet, due to strict policies and the use of innovative technologies, Tokyo 2020 was not canceled, and it enabled athletes from over 200 countries and delegations to come to Japan and realize their Olympic dreams and for their countries to showcase their national symbols. The study identified four main themes related to sport-tech diplomacy in Tokyo 2020 and based on the thematic analysis, offered five lessons scholars and practitioners can use as they further explore and analyze their multidisciplinary implications.

This case study is significant as it (a) explores and analyzes the relatively new concept of sport-tech diplomacy in nation branding and public diplomacy research, (b) explores and analyzes nation branding and public diplomacy implications and manifestations in the most significant mega-event held since the coronavirus pandemic, and (c) suggests lessons based on the role of sport-tech diplomacy in Tokyo 2020 that practitioners and scholars should consider when further developing the field. Yet, this study also has its share of limitations and delimitations, as it does not claim to argue a cause-and-effect impact on Japan's country image or how the use of technology during Tokyo 2020 impacted views of the host countries. That would require a different research design. Furthermore, due to TOCOG's restrictions and guidelines, access in Tokyo 2020 was more limited than in previous Olympics, which might have impacted the information analyzed in this study. Also, the study focused on Japan during the Tokyo 2020 Olympic Games, with only limited discussion on the Paralympic Games or

other countries. Deeper research is needed on sport-tech diplomacy in the Paralympic Movement and on further manifestations of sport-tech diplomacy in participating countries beyond the host.

Future research should further analyze the legacy of the use of sport-tech diplomacy in Tokyo 2020 through analyzing manifestations in the Beijing 2022 Winter Olympic Games, which were held during the COVID-19 pandemic under unpreceded restrictions. This case study discussed diplomatic implications of sports and technology, yet the sport-tech ecosystem is growing and will continue to change traditional sports consumption. To name a few upcoming digital trends: legalization of sports gambling in more states across America require new platforms to support online betting, the popularity of cryptocurrency as another form of commerce, and identifying sports marketing opportunities for using non-fungible tokens (NFTs). Moving forward, with the IOC targeting digitalization and gaming as part of the strategic plan Agenda 2020+5, with the next Olympic Games planned in modern democracies, and with the world learning to live with the pandemic and relaxing restrictions, future research should analyze the manifestations of sport-tech diplomacy as the Olympic Movement evolves.

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