ICSS
INTERNATIONAL CENTRE
FOR SPORT SECURITY

Journal

Vol 2 | No 1

Regulating the agent game

Securing sport

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Mohammed Hanzab

President, ICSS

Dear Reader,

This year was always going to be an amazing year for sport and for mega sporting events. With the staging of the 2014 Olympic and Paralympic Winter Games, the FIFA World Cup, the Commonwealth Games, the Youth Olympic Games and the Asian Games, the focus on the importance of sport in our society and the focus on a country's successful hosting of such sporting events is being watched under an intense global spotlight.

While we want the focus to be on the elite athletes, who train for years to represent their sport and their countries, the reality is that the inevitable focus is very much on the safety and security of competitors and spectators.

Sports news is forever moving from the back pages to the front pages – due, mostly, to issues around sport safety, security and integrity. These issues are at the very heart of the ICSS, representing our core business and are our day-to-day focus.

This year is also an important one for the ICSS as an organisation. As we celebrate the milestone of only our third year in operation, I reflect on what has been achieved in such a short period of time. We have cemented our starting position as a leading expert in sport safety and security and are now working with major leagues, sporting events and international federations; and, we are rapidly becoming a recognised global hub of expertise in the field of sport integrity.

With the regrettable growth of organised corruption in sport, our team of investigators and advisors, with unrivalled experience of working in the field to combat match-fixing and sports-results manipulation, are extremely busy.

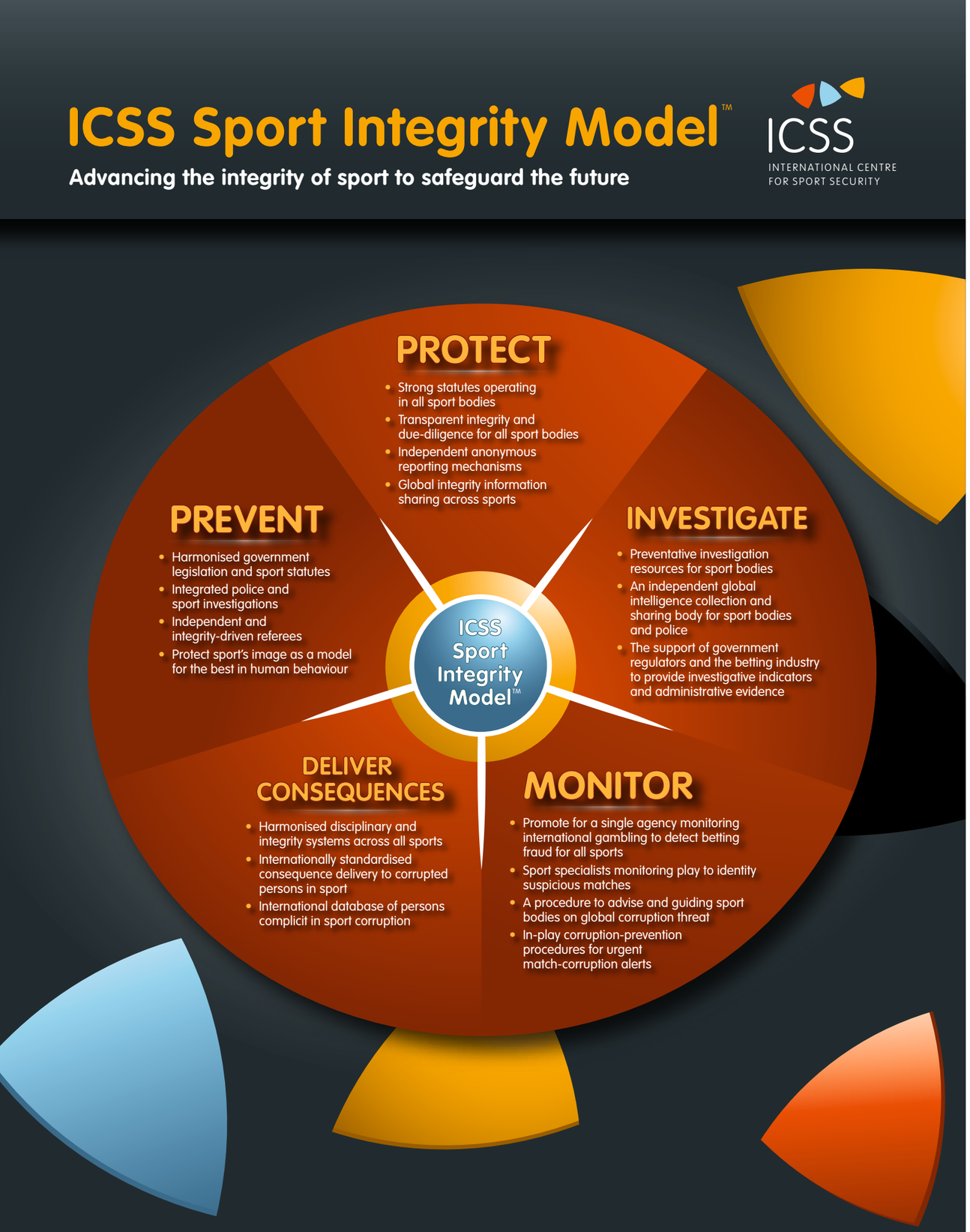
The ICSS is now in partnership with the European, Italian, Spanish and Qatar Professional leagues, with federations such as the World Professional

I am pleased to note our partnership with the Deutsche Fußball Liga

Billiards and Snooker Association, and at the end of last year we co-hosted major Forums at the United Nations and at the European Parliament on sport integrity.

Our Director of Sport Integrity, Chris Eaton, meanwhile, has been involved with investigations into match-fixing and another growing integrity issue: that of fake sports agents defrauding young athletes, particularly in the world of football. This is another example of where sports bodies, government and law enforcement need to take a strong line to protect vulnerable young athletes from unscrupulous criminals: there is enough money in the game to protect people, there must also be the will to take action.

I am also very pleased to note our new partnership with the Deutsche Fußball Liga. Our Executive Director, Helmut Spahn, knows the DFL well, and we are confident that together we can develop a range of educational programmes, stadium management courses and security operating tools



to help support leagues and competition holders in their delivery of safe, secure, sustainable and profitable venues.

Helmut also spoke at the third annual FanKongress in Berlin in January, which brought together 700 members of fan organisations. Discussing the, at times tense, relationship between fans and police, he stressed the importance of the two working together to deliver successful, fan-friendly events. This kind of engagement is an important aspect of the work the ICSS is doing in developing best practice approaches to safety and security.

The ICSS's ties with Italy and Germany have also taken a major step forward. I am delighted that Giusy Versace has become an Ambassador for the Save the Dream programme. Along with other members of our star team, Giusy will be helping with the new 'Tifiamo positivo' project, which is running in Italian schools and colleges – this will be an exciting opportunity for young people in combining creativity with sport integrity.

The articles in this issue of the *ICSS Journal* clearly show the broad scope of integrity, safety and security challenges that face major sporting event organisers and host governments. It is clear that biological passports are an important way forward in the fight against doping, whether at the Olympics, in football or in cycling. Match-fixing, and its associated evils, are now high on the agenda for sports bodies, gambling agencies and governments, and our

Biological passports are an important way forward in the fight against doping

own research conducted with the Université Paris 1 Panthéon-Sorbonne will hopefully advance the position with regard to strengthening and harmonising legislation worldwide. One aspect of this legislation will concern data sharing and privacy, an issue that also arises in sports marketing and commercial operations. With the rapid increase in connectivity in stadia, the technical and legal aspects of data security are going to be ever-more important for clubs and event organisers.

With the Olympic and Paralympic Winter Games successfully completed, the world now turns its eyes to "the Cup of Cups" – to quote Brazil's President Dilma Rousseff.

The prime security challenge at Sochi was to prevent a terrorist attack from external agents, and this was achieved in part through the creation of a wide security zone around Sochi and the mountain venue areas of Krasnaya Polyana.

In Brazil, the security challenges with multiple venues creates a different risk environment, one that requires more complex security management. Securing the movement of thousands of fans, foreign and domestic, between cities and urban centres close to stadia and Fan Zones, while being prepared to respond rapidly to incidents, will be the major challenge in Brazil.

We trust, and hope, all of these events are a huge success and the team at the ICSS is proud to play our part in ensuring safe, secure and fair sport.

Yours sincerely,
Mohammed Hanzab

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Lunae Parracho/Corbis

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Research begins into the complexities of sports economics

The Center for International Development (CID) at Harvard University and the International Centre for Sport Security (ICSS) have launched a two-year joint research project into the sustainable development of sports economies.

The research project will map out the factors that influence economic activity around sport, and create indicators that can be used to evaluate the potential for development of a city or region's sports sector.

Ricardo Hausmann, Director of the Center for International Development and Professor of the Practice of Economic Development at Harvard University, said the project will "enable us to broaden our insights into sport at the city and country levels using the Product Space methodology".

Professor Hausmann continued: "Through this collaboration, we will begin to understand the economic complexities that affect the development of sport as an industry. This is significant work as it will make a contribution to the public body of knowledge. It will help us to further identify why some cities and countries are more successful than others in developing robust and sustainable industries around sport."

The agreement is an important milestone

Mohammed Hanzab, President of the ICSS, said the agreement is an important milestone in the ICSS strategy of forging key working relationships with the world's leading experts, and will establish an analytical framework to assist cities and countries that want to develop their sports sectors.

Dr Shaun McCarthy heads up the ICSS Index – a project designed to assist client countries and cities to increase the economic and social contribution of sport. Dr McCarthy said: "This research will produce key insights into how various sports-related services and manufacturing industries play a role in economies. There are a number of important components required to create an integrated approach.

"The ICSS Index will combine these components to improve our ability to examine the private-sector activities and governance structures that influence a city's ability to develop sustainable sports sectors."

At the project launch, the ICSS was named as a Founding Member of CID's website for The Atlas of Economic Complexity, which enables users to visualise a country's total trade, track how these dynamics change over time and explore growth opportunities for more than 100 countries worldwide.

Ricardo Hausmann and Mohammed Hanzab signing the research agreement. To their left, Shaun McCarthy and Marcela Escobari (Executive Director, CID)

Giusy Versace joins 'Save the Dream'

Italian paralympian and former European record holder in the 100 m (T43 category), Giusy Versace, joined the 'Save the Dream' team in March, becoming an Ambassador for the project.

As an Ambassador, Versace will take part in a range of educational workshops and international events to raise awareness of disability sport and help promote sport integrity through her place on the Save the Dream Athletes Integrity Panel.

"I am delighted to be joining Save the Dream and would like to thank the Qatar Olympic Committee and the International Centre for Sport Security for this opportunity to educate and inspire young athletes around the world," Versace said on her appointment.

"Raising awareness of the many challenges that young people with a disability face and promoting clean, fair sport are topics that are close to my heart. Through Save the Dream, I look forward to sharing my experiences in sport with many young people around the world and hopefully I can inspire them to achieve their dreams and realise their full potential."

Save the Dream also extended its ties with Italy through the launch of a new programme – 'Tifiamo Positivo' – in March. Reaching out to 16- to 18-year-olds throughout Italy, the project will invite students to take part in a competition, submitting creative works such as posters, music tracks, audiovisuals, storyboards and photography that highlight the importance of sportsmanship and integrity in sport.

Save the Dream unites young people through sport

Winners of the competition will be invited to take part in a range of educational activities designed to promote integrity in sport and will receive training and professional development courses at the ICSS Headquarters in Doha.

The project will be managed by Save the Dream in conjunction with the Italian Committee for Sports against Drugs (CISCD), the Ministry of Education, University and Research, the Italian Olympic Committee (CONI) and the Italian Soccer Federation (FIGC).

Mohammed Hanzab, President of the ICSS, said: "I would like to thank CONI, the CISCD, FIGC and the Ministry of Education, and I look forward to working alongside them on this project. Initiatives like Tifiamo Positivo and Save the Dream play an important role in inspiring and uniting young people through sport, as well as teaching important ethics and values that can be applied in their everyday lives. I hope this will be a catalyst for many more international projects and exchange programmes."

NCS4 holds first college security conference

The National Center for Spectator Sports Safety and Security (NCS4) in the US hosted the first National Intercollegiate Athletics Safety and Security Summit on 28-30 January.

The conference brought together personnel responsible for safety and security management of college sporting events in the US. Participants included athletic department administrators, athletic conference administrators, campus police, local/state police, emergency managers, fire/hazmat personnel and emergency medical/health services.

High-profile sports events are potential terrorist targets

Prior to the meeting, NCS4 conducted a nationwide survey on current safety and security issues facing intercollegiate athletics. The results of the survey identified six major safety and security issues: sport facilities design, crowd management, game day safety, sport security technology solutions, building a culture of awareness, and safety and security staff development.

The summit focused on these issues, identifying solutions and best practices that NSC4 plans to publish as part of a 'Best Practices Guide for Intercollegiate Safety and Security'. The goal is to develop resources that can be used in conjunction with the 'Promising Practices for Securing College and University Spectator Events from Criminal Extremist Attacks (2011)', developed by the Federal Bureau of Investigation, the Bureau of Justice Assistance, and the US Department of Homeland Security (DHS). High-profile sporting events in the US have been identified by the DHS as potential terrorist targets, and university sport venues are no exception to this threat. More than 100 million people attend US college sporting events each year, with some stadium capacities exceeding 100,000 seats. It is therefore important for key stakeholders to acquire the necessary training and education to identify 'all-hazard' risks and provide a safe environment for facility patrons.

For more information, contact Dr Stacey Hall, Associate Director of the NCS4.

ICSS investigates fake agents scams

Scamming young athletes with promises of fake trials, contract offers and additional training at professional football clubs is on the rise, and the criminals are increasingly using social media to target victims.

An ICSS investigation into the scams revealed a growing threat from 'fake agents' who are using the identities of licensed football agents, or posing as club scouts or employees, in order to approach young professional footballers, mainly under-21s.

Fake agents approach young players on social media sites

The investigation has found that young players are being approached not only through social media websites, such as Facebook and LinkedIn, but also through scouting sites where players have previously uploaded videos of themselves playing football. If the player includes their email address on their profile, the fraudster may use this to send them a direct email.

Having established contact with the player, the fake agent, or person claiming to be a club scout, usually asks for approximately €500 ($700), for the purpose of 'registering the player's interest' and for any 'visas' they say are necessary. More money may be requested to 'cover' travel or other items, such as medical fees and insurance. The eventual fraud can amount to as much as €3,000 ($4,175).

While the issue of fake agents has been around for several years, the ICSS investigated the problem in more detail by engaging with players, clubs, payment transfer companies and social media sites.

The ICSS has seen players from Spain, Africa and the Cayman Islands targeted with the fake agents offering deals at Premier League Clubs in England, Turkey, Spain, Holland and the US. Furthermore, it would appear that the fraudsters are of Nigerian origin and could potentially be operating from Africa, Ukraine and England.

The criminals often produce fake documentation from clubs and email these to players as proof of the trial/contract offers. Bank accounts in England and money transfer accounts in England, US, Africa and Ukraine have been used by the fraudsters to try to take payments from players.

The ICSS is working with payment transfer companies and social media sites, who have already helped disrupt the criminals' activity by identifying, blocking and removing accounts of the fraudsters.

"Football cannot regulate against this type of criminal activity," said Jake Marsh, Sport Integrity Investigator at the ICSS. "However, we would like to see more clubs and associations post pages on their websites alerting young players to how these criminals operate."

The ICSS has praised Manchester City FC for displaying warnings to young players directly on their website. "We would like more people within football to take this approach," said Marsh.

MBT photos/iStock images

Young footballers are at risk from fraudsters pretending to be football agents or club scouts

Costs rise for Pan American Games

Security costs for the 2015 Pan American Games in Toronto, Canada, have been revised up to CAN$239 million ($216 million), according to press reports in early March. Original security cost estimates at the time of bidding were CAN$113 million ($102 million). The estimate includes costs for private security services, the Ontario Provincial Police and local police forces across 14 communities in southern Ontario.

The Pan American Games figure compares to the almost CAN$900 million ($812 million) that was spent on security at the Vancouver Winter Olympics. The latest budget estimate for the total cost of the event stands at around CAN$2.5 billion ($2.3 billion), up from an original CAN$1.4 billion ($1.3 billion). About 10,000 athletes from 41 countries are expected to take part in the Games.

Sports bodies face rising cyber protest and criminality

Hackers claiming to be part of the Anonymous network are planning to target the 2014 FIFA World Cup in Brazil, according to a *Reuters* report.

Reuters contacted several self-proclaimed members of the international hacking network after locating them online. The hackers said that this summer's event offers an unprecedented global audience and is an opportunity to infiltrate sites operated by FIFA, the Brazilian government and corporate sponsors.

"It's not a question of whether the Cup will be targeted but when," said William Beer, a cyber security expert at consultants Alvarez & Marsal. "So resilience and response become extremely important."

The Brazilian army has created a Cyber Defense Center, which will lead a multi-agency task force. Its commander, General José Carlos dos Santos, has said: "It would be reckless for any nation to say it's 100 per cent prepared for a threat, but Brazil is prepared to respond to the most likely cyber threats."

In 2012, the cyber command detected 140 attempted security breaches during a United Nations conference on climate change in Rio de Janeiro, and more than 300 during the 2013 Confederations Cup, according to the *Reuters* report. "We expect that number to be much higher for the Cup," said Dos Santos.

ATOS, the official IT partner of the Olympics, detected 255 million security events during London 2012. But these had "absolutely no impact", said Michele Hyron, head of the ATOS team for the Rio 2016 Olympic Games.

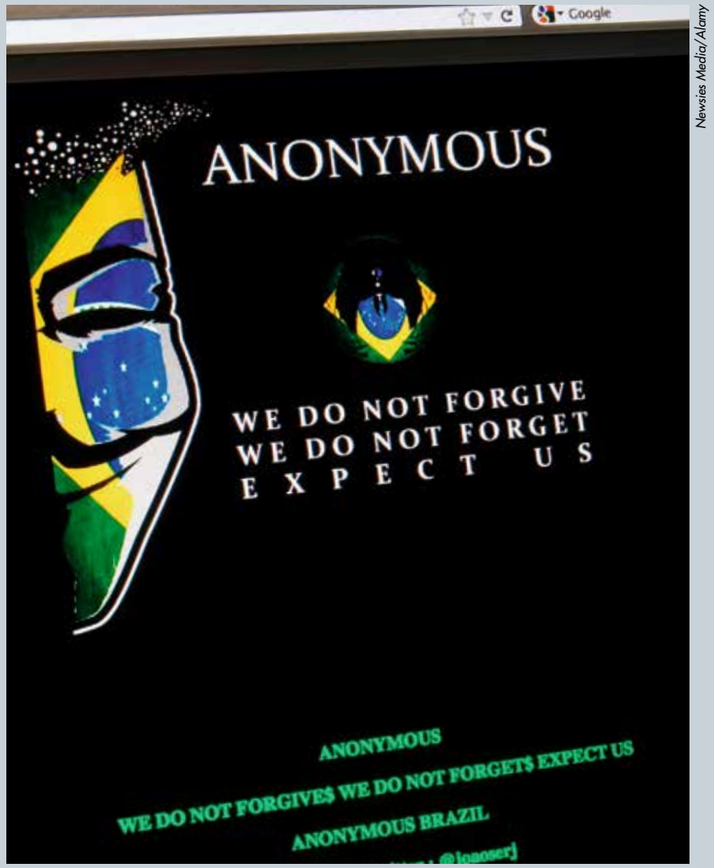
UEFA has reported a growing number of attacks in recent years

"The World Cup is the theme of the moment," said Fabio Assolini, a security analyst at Kaspersky in São Paulo, "and cyber criminals are taking full advantage of that."

UEFA has also reported a growing number of cyber attacks in recent years, mainly from fans protesting against its decisions. The governing body said most attacks came during a large event, such as the European Championship, but also after some Champions League games.

UEFA Head of ICT, Daniel Marion, told the Computer World UK website in June 2013: "Hactivism has been more active in the past two or three years. It has been seen in other areas and now sport. The Olympics went through the exact same thing. In 2008 we had zero and in the last Euros we had everyday attacks."

Individual football clubs are also having to cope with hacks, both football- and politically oriented. Real Madrid has suffered, in their case from 'spearphishing' (attempting to steal data from specific targets). In 2013, images of player Cristiano Ronaldo on Facebook pages tempted fans to enter login details on what appeared to be an official club website. The fake site thereby gathered login details, which hackers could later try to use in identity frauds.



Newsies Media/Alamy

Members of hacking network Anonymous are reported to want to disrupt this year's FIFA World Cup

Rio and beyond

Professor Simon Chadwick looks at some of the issues facing the sport sector in a year of intense activity

Brazil's World Cup continues to be beset by problems

To everyone's relief, the Winter Olympic Games in Sochi passed without major safety or security incident, and as the Journal went to press, the Paralympics were underway. While the sporting events were without doubt a success, the sheer size, and political significance, of the $51 billion event fuelled intense debate across a spectrum of issues: from the costs, benefits and socio-economic impacts through to issues of gay rights, the control of civil protests and links to President Putin's broader geo-political agenda.

It is to be hoped that these issues will remain in peoples' minds now the event is over; there are innumerable lessons for sport and for those managing within it. Some examples of these include notions of legacy and event-bidding decisions; the monitoring and regulation of pressure groups and crowds; and the securing of sports venues and fan zones, both physically and commercially.

Prior to the Sochi Games, security fears were heightened by two suicide bombings at the end of December in Volgograd. The attacks targeted the public transport network in the Southern Russian oblast, killing 34 people. This came only two months after a bus bombing in the same city.

Transport infrastructure is always vulnerable and should never be forgotten in risk assessments for sports events, even if the temptation exists to focus security efforts on the prime sporting venues, such as stadiums and athlete residences. Given the large volume of footfall one often sees in places such as metro and railway stations, allied to the delays that closely monitoring and controlling the crowds can cause, securing transport infrastructure can be both complex and costly. Recent Russian experience nevertheless demonstrates how important this aspect of sporting mega-event management actually is.

We are now heading towards another important Winter Olympics decision – which city will win the bid to host the 2022 Games. Cities that have bid are Kraków in Poland, Oslo in Norway, Almaty in Kazakhstan, Lviv in Ukraine and Beijing in China. Stockholm withdrew its bid to host the games, citing lack of political support and general economic concerns. This withdrawal came after both Oslo and Munich held referendums that allowed local people to decide whether or not each city should bid to host the Winter Olympics. The former city's population said 'yes', the latter's 'no'.

Democratically asking people for their views on an event-hosting decision is an interesting step, which raises a series of issues around the governance of sport, most notably the extent to which democratic processes might underpin similar such decisions across sport. For instance, when public finance issues are likely to impose particular fiscal demands upon a city, we now appear to be witnessing the emergence of a crowd-sourced decision-making process.

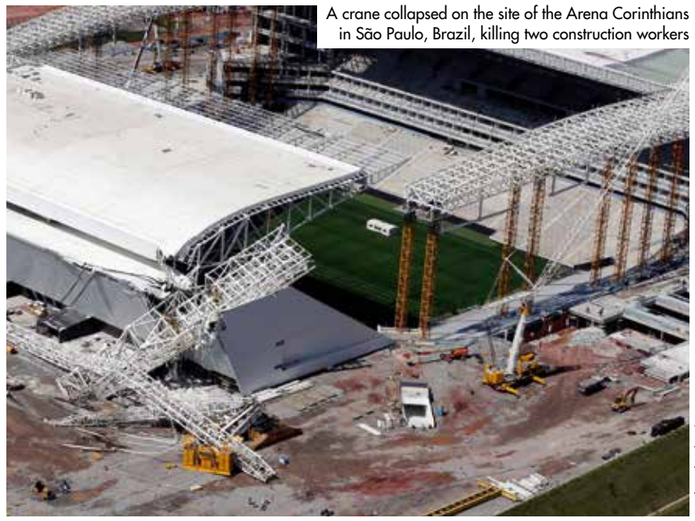
This year's other major sporting event – Brazil's World Cup – continues to be beset by problems. In late 2013, stadium construction issues were brought into sharp focus by the collapse of a crane at the Arena Corinthians in São Paulo, which killed two workers. Following last year's riots during FIFA's Confederations Cup tournament, further riots took place in January 2014, with almost 3,000 people on the streets of São Paulo, 128 of them being detained by the police.

Alongside these incidents, Brazilian crime gang, the Primeiro Comando da Capital (PCC), has threatened to bring a reign of terror during the World Cup, and hacker groups have declared plans to disrupt organisers' and sponsors' websites. Adding to the already heady mix in Brazil, the country's presidential election campaign begins in the middle of football's premier international tournament.

Suffice to say that this summer promises to be a complicated one, both for the Brazilian authorities, and for FIFA. Stadium issues remain for the country, with some stadia still to be completed. The experience of Brazil holds some important lessons for event management, project planning and the importance of upholding strong standards of safety. The latter issue similarly continues to attract attention from the world's media and organisations such as Human Rights Watch as Qatar continues to grapple with the implications of its hosting the 2022 FIFA World Cup.

At the same time, the way in which popular and civil protestors have adopted the World Cup as a focal point for their actions highlights the challenges for event owners of monitoring threats, gathering intelligence and mitigating risks. In spite of the favela 'cleansing' process in which the Brazilian government has previously engaged, the PCC remains a particularly interesting threat, both in terms of its extended network organisation and its ability to perpetrate cyber-crime.

Two other recent stories are worthy of mention: one being the commercial deal agreed between English Premier League football club Arsenal and Chinese telecommunications giant Huawei; the other being the tragic skiing accident involving former F1 World Champion Michael Schumacher.



A crane collapsed on the site of the Arena Corinthians in São Paulo, Brazil, killing two construction workers

Paulo Whitaker/Reuters

Arsenal's deal with Huawei is a two-year agreement that sees the Chinese electronics corporation become the club's official global smartphone provider. Given that Arsenal's majority shareholder is American sports entrepreneur Stanley Kroenke, this is an interesting partnership choice.

The United States government has banned Huawei from bidding to supply equipment to networks considered to be an important part of national infrastructure, and Australia and India have previously taken the same action. This means that the commercial deal between the Chinese company and Arsenal is locked into an arrangement that is potentially linked to an array of strategic, security and political issues.

Following a skiing accident in France at the turn of the last year, Michael Schumacher has been in a coma. While stories abound as to whether the former F1 star will emerge from his current state, the nature of Schumacher's accident highlights some serious concerns about sports people, their security, and risks to their financial and commercial worth.

Schumacher was thought to be skiing 'off-piste', creating an element of personal danger many believe is what motivated the German to become one of the world's leading racing drivers. There are echoes of Schumacher's accident in what happened to fellow former F1 driver Robert Kubica several years ago. During an out-of-season rallying event, the Polish driver almost severed his hand and has not returned to F1 since.

Athletes are valuable human resources that are acquired and remunerated by companies involved in sport, and commercial entities in their own right, so taking part in high-risk activities like skiing poses a threat to their economic security. While contracts will often prohibit such activities, some people argue that successful athletes are motivated by a sense of challenge. Hence, to prohibit them from engaging in dangerous pursuits would blunt the essence of who they are and what they do. This conundrum clearly poses some distinctive management challenges for the teams, commercial partners and other organisations with which athletes have a relationship. ■

Simon Chadwick is Director of the Centre for the International Business of Sport, Coventry University.

Security view

Malcolm Tarbitt discusses safety and security measures at the Sochi Winter Olympic Games

The highlight of the past quarter was attending the Winter Olympics in Sochi. From 5-10 February we visited the venues and live sites, checking out the safety and security measures in place, and meeting the security organisers.

A detailed report will be available soon, but I can share our overall impressions with you here: these were of a very well-organised security operation, using state-of-the-art technology that should be a benchmark for future events. There were, however, some areas for improvement, as there are for all major sporting events.

As with any event, there were some initial problems, but we saw these being rapidly corrected. One example was the bubble-to-bubble coach-based transport system up to the mountain venues. Official procedures stated that the coaches should remain sealed between destinations, but it soon became evident that drivers were stopping for cigarette breaks en route. This was quickly corrected, demonstrating the importance of not just setting procedures, but also reviewing them in operation, reinforcing or adjusting as necessary.

Overall impressions were of a very well-organised security operation

At the Olympic Park itself there was a high standard of security overall. Outside the Park, there was a visible, uniformed police presence, generously spread throughout the precinct. Furthermore, sufficient surveillance cameras could be seen installed around the perimeter.

Our only criticism here was the poorly managed vehicular access road leading to the Olympic Park, and the resultant traffic congestion, in addition to the possibility of penetrating the Park relatively easily via a standard access gate leading from the intersection with Kazachaya Street. It appeared feasible that vehicles could enter Kazachya Street at high speed and break through the standard metal/diamond mesh gates with ease. No physical security, Crime Prevention Through Environmental Design (CPTED) or other visible counterterrorism measures appeared to have been implemented. This was clearly a security design issue.

Park surveillance

Once inside the Park, relatively few security forces were visible in uniform, although a large number of them were present and clothed in the Sochi Olympics uniform. Furthermore, a large number of surveillance cameras monitored the area, and two airships were noted overhead. These were equipped with cameras, which presumably monitored the venue.

Going through the access control, we first had to engage the ticket control and then the security check. Since both controls took place in the same area, it would have been easy for a saboteur to inflict considerable damage. A better solution would have been to stagger the controls – first the security check and then in the following area, the card check. If they wanted to check the ticket before performing the security check, they should rather have established a ticket check perimeter away from the actual access-control area.

On the positive side, due to the high number of control stations and the wide layout of the access and exit areas, the waiting time was very short, and it should be mentioned that the security staff were professional, friendly and helpful.

Another area for improvement was the inner area of the Olympic Park, which had no signage indicating the emergency exits. Since the park is very big, the missing information signs could cause a lot of confusion in an emergency situation.

On the night of the Opening Ceremony, the team attended as spectators at the Fisht Stadium, and in our view the security infrastructure was very well organised. However, once again there were weaknesses in the area of safety management, and had there been an emergency this could have led to serious problems. The emergency exit signs/emergency lighting and the corresponding fire-fighting equipment and their identification should have been installed. The barrier-free access was relatively long and steep. Wheelchair users or persons with disabilities would have battled without assistance. A corresponding lift or special access for such persons with disabilities did not exist.

The security measures on the transport systems up to the Krasnaya Polyana mountain venue, and at the venue itself, were extremely good, and the team saw little to criticise. Details of these measures will be included in our full report, but here I would draw attention to the GPS and surveillance cameras installed in the coaches, which provided an essential building block in the transportation safety system. Such technology should be standard at major sports events.

Fan-zone analysis

The weakest area, in our view, was the Live Site, or fan zone, in Sochi. The perimeter fencing was too low, had gaps at the bottom through which items could be passed, and fence sections were not fastened securely to the ground or each other. No tickets were required, the number of people on site was not controlled, and fire safety and medical services provision were not obvious or poorly signed.

Searches were carried out at the entrance, and security forces were stationed outside the site, with guards inside, but the perimeter appeared insecure. Live Sites, while presenting different security challenges to main venues, need to receive the same attention with regard to security planning and design as other aspects of the event.

Finally, it is worth mentioning the Pass and Ticket systems. Again, these are covered in more detail in our full report, but the Spectator Pass with integrated RFID chip is a pioneering technology that should be adopted at other major events. It allowed security authorities to prepare in advance an appropriate review of all visitors. It also enabled the Sochi Olympic Organising Committee (SOOC) to collect accurate information about the visitors on the event premises or in any of the arenas inside the premises. The only disadvantage was the restricted number of pick-up options and the resulting long waiting time. This problem also applied to obtaining the separate Tickets, but this caveat aside, the Pass and Ticket systems should be emulated.

Police officers check a cart of hockey sticks after they were unloaded from an aircraft during the Sochi Winter Olympic Games

Mark Humphrey/PA Images

A good experience

Overall, Sochi was a good experience seen through the eyes of a visiting spectator, and security measures were very good. The security personnel were professional and showed a friendly demeanour; weapons were rarely seen. The mixture of open and concealed security worked well to ensure a feeling of security without being oppressive. It was only in the safety features that the performance got marked down to some extent.

Although Sochi offered one of the best electronic- and operational-security operations seen for any major sporting event, technology may change and the lessons of Sochi must be borne in mind in order to prepare properly for the FIFA World Cup in 2018. ■

Malcolm Tarbitt is Director Security & Risk Advisory at the International Centre for Sport Security.

Questions of integrity

In order to tackle match-fixing, we should focus on the criminals, says **Chris Eaton**

Questions about which authority is in control, and which authority pays for prevention and investigation, are undermining sport integrity protection. The inquiries into the allegedly fixed pre-World Cup international friendlies of 2010 in South Africa, are a case in point.

A FIFA investigation into the matter concluded in early 2012. Since then, FIFA and the South African government have moved from trading compliments to insults, Puma has withdrawn its sponsorship of the national federation, and football leadership in South Africa has changed hands.

South African President Jacob Zuma wanted a public inquiry; FIFA at first resisted, then agreed. Many months later, with no inquiry actually commenced, FIFA's ethics body decided to do another investigation itself. The South African government howled in protest, but in February this year Zuma cancelled the judicial inquiry and deferred to FIFA. Then in March the government announced that there may yet still be a judicial inquiry, but only after FIFA finishes its own.

Betting fraud initiates and funds the vast majority of match-fixing in any sport

Amid the procrastination, football's reputation suffers. There is no mystery about the facts, just a contest over control. In an unclear mix of national and football jurisdictions, the only people laughing are the criminals who organised it all and got their money four years ago.

This saga highlights the need for reform and greater coherency in global sport integrity. The Sorbonne-ICSS study on sport integrity and sport betting fraud, which is reporting in May this year, will recommend real, institutional solutions that are desperately needed.

In early 2014, four match-fixing investigations in three continents converged, partly because the same criminals were involved, partly because the same criminal strategies were invoked and partly because authorities chose to allow fixes to go ahead to collect evidence.

Last year in Australia, several journeyman English players were arrested for fixing football matches in a lower division. Some of the resulting prosecutions concluded this year. In England, low-division players were arrested following media 'sting operations'. In Hong Kong, professional footballers were among those arrested at the beginning of this year. Although the players in question were from a first division club, it was not in a major league.

In England and Australia some of the Singaporean and Malaysian criminals and connections are the same. The targets were low-division clubs where spectator interest and media coverage are light, but betting on matches is international and significant.

It seems that many match-fixing syndicates are returning to where they came from – fixing low-level football and cricket matches for more modest betting fraud – because of the global interest in sport corruption today and the heat being applied by police and sports around the world.

But these criminal leopards will not change their spots. They may bounce fixing operations up and down divisions to avoid detection, but they are making far too much easy money from betting fraud to abandon the game. They will not go away until governments collectively control and regulate sport betting globally.

In at least two of these cases, cricket in Bangladesh and football in Australia, the police or sport authorities allowed a planned fix to go ahead to collect or confirm evidence. In both cases so far the real masterminds behind the betting frauds have walked away with their money, while players and low-level fixers have been charged.

It is hard to criticise when authorities are working under conditions where prosecutions are the only measure of success, but we must focus on prevention – denying criminals the money and disrupting criminal syndicates – not merely on prosecution of dishonest players and criminal minions.

Focusing on criminality can also give us a perspective on how to approach sport betting regulation. Three of the biggest and most influential countries in the world – the US, India and China – outlaw betting on sports to varying degrees. Not coincidentally, the same three countries have by far the biggest illegal sport betting operations!

From January this year some local laws in the US have been eased to allow live sport betting. In India there is a significant push for sport betting to be legalised. In China, the exception, there remains a stoic silence on the issue.

Blanket prohibitions, especially of popular human activities like sport betting, have never proved workable, particularly in a global marketplace. Betting fraud initiates and funds the vast majority of match-fixing in any sport around the world. Regulated and supervised sport betting offers the best chance to control match-fixing – it is in an unregulated environment that it thrives.

It is often simpler for authorities to identify and prosecute the players involved in match-fixing than it is to catch the criminals behind them

Radharc Images/Alamy

The US is headed in the right direction, underpinned as it is by strong betting regulations and regulators, and the Indian debate is timely and appropriate. However, China remains the biggest sport betting nation in the world, but all of it is illegal, and, therefore, invisible to global investigators.

This year prosecutions of football players in Malaysia and Belgium have highlighted the fact that authorities find it far simpler to identify and prosecute players than to identify and prosecute the criminals behind them.

There are almost always two conspiracies to a successful match-fix. The first is to fix the match by corrupting somebody in it. The second is to fix the betting fraud by tricking or corrupting the bookmaker. The money for match-fixing in these cases comes from the betting fraud. It is these criminals that authorities should focus on. Stop them, control betting fraud, and you control and stop match-fixing by association.

And there is another dimension to focusing on the betting fraud – the impact on players. South Korea has been witness to an amazing amount of match-fixing across many sports in their country – baseball, volleyball and football to mention only three. The most tragic manifestation of the shame brought on players who participate in match-fixing is incidents of suicide. There have been several in Korea, the latest early this year. In Italy, famed footballer Gattuso, investigated by a police inquiry on match-fixing, threatened to commit suicide if found to be complicit. While he was probably making a point about his innocence, the threat shows the degree of shame attached.

It is obvious to me that attention is too focused on the players and insufficiently on the criminals who corrupt them and rip off honest gamblers. I don't suggest that players should not face any consequences for their illegal actions, but we should put their actions in context with the totality of the criminal conspiracies behind them. Encouraging players to confess and to provide information about how and who involved them is crucial to defeating match-fixing globally. Whistleblowing has to be backed up with institutionalised rehabilitation of players back into the sport, once reasonable sanctions have been applied. ■

Chris Eaton is Director of Sport Integrity at the International Centre for Sport Security.

Regulating the transfer market: the debate on reform

With FIFA's reform of regulations applicable to football players' agents due to come into effect in April 2015, the ICSS invited several stakeholders and experts to contribute their views on the current proposals

The Executive Committee of the Fédération Internationale de Football Association (FIFA) approved new Regulations on Working with Intermediaries at its meeting in Zurich on 21 March. The new regulations will reform the current system of licensed football agents, replacing it with regulations that should govern the role of intermediaries in player transfers and contract negotiations.

FIFA stated after its meeting that "approval by the committee concludes an extensive and continuous consultation process involving member associations, confederations, clubs, FIFPro and professional football leagues, originally initiated in 2009 when the 59th FIFA Congress decided that an in-depth reform of the players' agents system was necessary in order to address several shortfalls that had been identified within the licensing system."

Until 1991, agents were prohibited by FIFA from any involvement in player transactions, but since then agents have been licensed to represent players and clubs, with various modifications to the licensing regulations having been made in 2001 and 2008. Then in 2009, FIFA proposed a new approach through Draft Regulations on Working with Intermediaries, proposals that would eliminate the licensing system and focus on regulating the activities of intermediaries rather than controlling access to the activity itself.

Following the Executive Committee's decision, the new regulations will come into force on 1 April 2015, provided that the changes are approved by the 64th FIFA Congress in June 2014.

The opinions expressed by the following contributors reflect the intense debate over these reforms, and indicate some of the problems that may yet affect the final shape of the new regulations.

JVphoto/Alamy; FR Sport Photography/Alamy

EMANUEL MACEDO DE MEDEIROS, Chief Executive Officer, Association of European Professional Football Leagues (EPFL)

FIFA's licensing system to regulate players' agents has failed, with at least 70 per cent of international transfers going ahead without a licensed agent involved, according to FIFA itself.

Whether this reflects the activities of unlicensed agents, or simply an absence of agent involvement in those transfers is unclear, but in either case there is little doubt that this stark figure is due to a failure on the part of FIFA and National Football Associations to enforce their own regulations.

The current system needs reform. But FIFA's initial regulatory response in 2009, with the preliminary draft regulations on working with intermediaries, if it went through, would simply lead to anarchy and chaos. Eliminating the licensing system, as it was then proposed, would lead to an inexorable free-for-all, with individuals and firms being able to freely operate in the transfer market without being subject to any controls, rules of conduct or supervision. At the same time, clubs and players would be put in the position of responsibility and liability for these intermediaries' activities. This would undermine all the effort made over the past 20 years to enhance football's reputation and remove unscrupulous individuals and unethical behaviour from the football transfer market.

Two other alternatives, of agent self-regulation and ISO standardisation, have been put forward, the latter suggested by the European Commission, but neither seems workable, at least not in the short- to medium-term.

After almost four years of impasse, I have proposed to FIFA, on behalf of the EPFL, a solution to this problem. A solution which FIFA welcomed and adopted after extensive and inclusive consultation with the relevant stakeholders. This consists of a system of registration for all intermediaries, whose minimum criteria are defined by FIFA and operated by the national football associations at the national level. Clubs and players will be free to choose whoever they deem fit and proper to represent their interests, but intermediaries will be obliged to meet a set of minimal criteria to be allowed to register, which may be further developed and enhanced by the national associations in accordance with the principle of subsidiarity. Conducting business in a national territory will therefore require previous registration, and registration will imply a regulatory relationship between intermediaries and national associations, thereby making the intermediary subject to sanctions for improper conduct. FIFA remains the underpinning regulatory authority, holding an overarching supervisory role, which includes the responsibility to monitor each national association's compliance and enforcement of its own regulations, and impose sanctions for non-performance.

What is also indisputable is the need for enhanced financial transparency related to players' transfers. Action must be taken without any further delay if football is to avoid more damaging incidents of the kind seen recently. Progress has been made in recent years in certain national associations and leagues to reduce the level of fraud and irregular payments in transaction between clubs, players and agents, but it is crucial that this progress continues to be made. The introduction of the FIFA TMS represented a major step forward in this sense, but, given the mounting complexity and financial sophistication of transfer transactions, often involving third parties based offshore, it is clear that a much more robust and proactive approach is required. In the interests of transparency and financial regularity, FIFA should either enhance its TMS, to cover the loopholes, or legislate for clearing houses for both international and national transfers, to manage all payments between clubs, players and intermediaries. This would both guarantee probity and provide a source of data to monitor fees and transfer finance. Further, by imposing a rule that payments by clubs or players can only be made to registered intermediaries, football authorities would be finally able to trace effectively who pays how much to whom.

We therefore trust that these reformist proposals will be adopted, and that all stakeholders can be persuaded that they can better protect everyone's interests, including young players, agents, and football itself. In the absence of 'silver bullets', they are undoubtedly our best weapon.

DR SERHAT YILMAZ, University of Westminster

Two factors will be essential for the success of the proposed regulatory reforms by FIFA: enforcement and education.

Enforcement is a crucial element of any regulatory framework. The monitoring of regulatory breaches and sanctioning are necessary components of enforcement and both have been missing under the current licensing system. FIFA and most member associations have failed to properly monitor the activities of players' agents and to impose sanction for those who are in breach, which, in turn, contributed to the problem of unlicensed agents and unscrupulous behaviours.

FIFA's explanation for the lack of enforcement, and one justification for the proposed reforms, is its lack of jurisdiction on parties outside the current system, as it only binds those who are affiliated to FIFA, namely players, clubs, licensed agents and member associations. Therefore, under proposed reforms players and clubs will be held accountable for the conduct of their intermediaries and there will be no circumstances in which no governing body has jurisdiction enabling them to impose sanctions.

The monitoring, on the other hand, will be via the registration system implemented by member associations. At international level, the Transfer Matching System (TMS) is a important tool implemented by FIFA which provides impetus to the monitoring of international transfer, including player's agents involved. Member associations will need to adopt a rigorous approach to monitoring at domestic level, whilst FIFA, conducting its supervisory role, should not hesitate to sanction those associations failing to do so.

Education is important to ensure the protection of players through raising professional and ethical standards amongst intermediaries. However, since the proposed reforms remove the licensing system it may be hard to establish that all intermediaries understand the various rules and regulations that govern their activities. The exam under the existing system is a mechanism through which FIFA and member associations are able to establish that players' agents have a sufficient understanding of regulations and domestic law. Without such a mechanism, the lack of competency may contribute to infringements by intermediaries, which then may lead to unfair sanctioning of either players or clubs. A possible solution could [emerge] through continuing professional education combined with a revalidation process for registration. Additionally, FIFA and member associations should consider educating players about intermediaries, with particular attention to be given to young players who are more vulnerable to exploitation.

FR Sport Photography/Alamy

PROFESSOR MEL STEIN, Chairman, UK Association of Football Agents and Visiting Professor of Sports Law, Coventry University

The Licensed Football Agent is currently authorised to conduct his business under the Agents' Regulations of The Football Association and the relevant governing bodies of all other footballing nations. He is a member of a professional body and in exactly the same way as in any other profession, such as a lawyer, accountant, doctor or pharmacist, he has had to pass an examination to obtain his qualification and licence and then gain practical experience whilst operating within the complex and onerous rules of his relevant regulatory body.

Yet, astonishingly, on 1 February 2015 he will effectively cease to exist, as FIFA seek to bring the profession to an end and 'replace' it with the role of 'intermediaries' The only qualification to become an intermediary will be the absence of a criminal record. It simply beggars belief.

It is anticipated that thousands of previously unlicensed individuals (and in particular those who have either failed the entry exam or have

been operating illegally under the radar as unlicensed individuals) will now be able to conduct and compete for the same business into which Licensed Agents have invested so much time and effort and money over many years (in some cases over 40 years).

The reasons given by FIFA and its apologists are simply unacceptable. They quote the number of transactions which they claim were conducted by unlicensed individuals, but fail to mention that, if indeed this is the case (and I would suggest the figures are totally distorted), this is due to its own incompetence.

I can only speak for the 400 or so Licensed Agents operating in the UK alongside the Registered Lawyers. These Authorised Agents are strictly regulated by The Football Association [FA] and the great majority of all transfers within this country operate strictly within the rules which are even more strictly applied by The English FA. We here have in no way been consulted by FIFA or had any part in the *Alice in Wonderland* approach to these draconian rule changes. We find ourselves about to be penalised for the sins of others, including the sin of omission by FIFA in its failure to ensure its own rules and regulations were applied.

The new proposed intermediary rules (if they can actually be called rules) don't even mention 'agents' until, with the sting in the tail of the last paragraph, they are told they must surrender their licences and effectively commit mass suicide.

The Association of Football Agents in the UK represents over 95 per cent of all the agents and lawyers acting within the jurisdiction of the FA. They are simply not going to roll over and die. FIFA seems to have backtracked on the capping of fees at three per cent, but, having put that idea into the minds of the EPL and the other Leagues, it will be impossible to get it out again. FIFA knew what it was doing with that malicious step.

In the UK AFA's opinion, these new intermediary proposals are illegal, being an abuse of a dominant position and anti-competitive, as well as falling foul of both EU and domestic law. I have not been afforded the space in this article to quote chapter and verse but there will be time for that in due course, as FIFA will discover.

The days of regulation of agents without representation are over. We are a body with a mouth and teeth. We will use them, and, to that effect, we have instructed senior counsel both here and (alongside our brethren at the European Agents Association) in Europe.

ALVARO TORRES, Spanish agent and member of You First Sports (Licence No. 90)

FR Sport Photography/Alamy

For a long time I have heard talk of the need to reform the regulation of agents. There are different proposals, but some of them are unnecessary and I think would hurt the profession. If you want a more transparent and secure system you cannot give complete liberty to anyone who wants to act as a football agent. All the years we have fought for better control of this activity would come to nothing if they eliminate the obligation to have an official licence as it is now configured. That doesn't make sense. Eliminating the controls that now exist would be prostituting the profession. Agents are important and necessary, all players have one, right up to Cristiano Ronaldo and Messi.

At the same time, some people want to impose periodic reviews for agents, so we would have to retake exams every few years. I don't see the logic; it's not a measure that exists in other professions, such as architects, lawyers, etc.

I think the current regulations handle sufficiently well the issue of intermediaries, who are just people that don't represent the player but are involved in a transaction on behalf of a club. They are almost always agents anyway. They don't conflict with the role of the agent and I don't think new rules are needed.

With regard to fees, the current limit is set at 10 per cent, leaving the agent free to reach an agreement with the club and the player. I don't think that changing that percentage is a useful measure, or that it would benefit anybody to make it lower.

DR GIAMBATTISTA ROSSI, Research Fellow in Sport Management at Birkbeck, University of London

FIFA reform of players' agents regulation is based for four main pillars: transparency, values of fees, conflicts of interests and education.

The first two represent the strengths of the FIFA reform. Briefly – it aims to increase transparency and accountability of players' transfers, tracking the profiles of clubs, intermediaries and players and recording the financial flows generated within the transfer market. In this regard, the implementation of two integrated information systems, the TMS and the GPX, clearly support the new regulatory framework on football intermediaries. In this context, FIFA understands that the transfer market has never been properly supervised and its transparency should favour the interests of football stakeholders. The establishment of clearing houses, both at national and international levels to reinforce financial transparency and supervision is the missing element to take into consideration.

Conversely, the last two elements have not been properly met so far. The proposed reform deregulates the intermediation market, eradicating the weak current entry barriers; i.e. the licensing system. The lack of restrictions regarding the identity of intermediaries and their credentials or qualifications, financial security and their ability to provide agency service will have detrimental effects in football. The actions of unqualified, unregulated and unscrupulous intermediaries may further compromise the integrity of the game, leading to more situations of conflicts of interests in a market highly dependent on scouting and networking. In this context, football players that are the core of the transfer system will receive less support in developing their career that will mainly depend on clubs' strategies.

Currently, the FIFA reforms do not offer a legal base for the enforcement of regulations against intermediaries. This legal void will favour the most established intermediaries at the expense of proper regulated market competition. This phenomenon may be exacerbated in those countries whose associations completely embrace the current FIFA agents' regulations and whose governments have not implemented specific regulations at national level. Accordingly, the current debate should shift its attention to who should have the enforcement power on football intermediaries, and how.

The reform and the implementation of any regulatory framework on football agents should not be adopted in isolation from reform of labour market. The recent legal challenge launched by FIFPro against the current transfer system is a good example of the need for an alternative approach. If the validity of this challenge is recognised by the European Court of Justice, all main football stakeholders will be involved in reforms of the entire labour market. In this context, the FIFA reform on agents will certainly be called into question, and face radical modification. Any approach has to recognise the relevance and importance of the mechanisms regulating the transfer market that directly affects the activity of players' agents and football intermediaries.

The interdependence between agents and the transfer system cannot be excluded from the debate. The so-called Social Dialogue represents the appropriate starting point as it requires the involvement of all major stakeholders in football. For this reason, specific criteria should be met by agents whose European association, the EFAA, has to enlarge its membership to become officially recognised by European authorities inside and outside the football industry.

The opinions expressed here are those of the authors and do not represent those of the International Centre for Sport Security or Newsdesk Media

Police officers inspect a road on the Olympic Route Network during the London 2012 Games. Such systems are designed to increase mobility

Michael Kemp/Alamy

In place of barriers: mobility and security at major events

Professor Richard Giulianotti considers how security and safety planning for major sporting events can be viewed through the prism of 'mobility'

In recent years, mobility has become one of the most important issues in the fields of policing and security. Thus, we find police and security personnel in many Western countries seeking to get ahead of criminal activity through the use of the quickest transport methods, rapid response units, and fast information-gathering, analysis and dissemination systems.

For major sport events, the issues of mobility and movement are crucial to safety and security, for example in the policing of crowds and popular demonstrations, as well as in the organisation of security against potential terrorist attack. In this discussion, I examine the critical mobility issues that surround sport events, and the different security strategies that may be introduced in response.

To begin, we need to clarify what is meant by 'mobility'. In this article, mobility refers primarily to the movement of people, but we recognise also that it involves the movement of other elements, such as information or data, images, money and products. Most spheres of social life – whether in work, business, politics, media, social relationships, the environment, and, of course, sport – are increasingly 'mobile' in terms of being put together across significant geographical distances, and thus relying on the smooth movement of people, objects, commodities, information and ideas.

The staging of major sport events is a case in point: participants, officials, media, and event sponsors from across the world congregate, while information and images from the event are beamed worldwide. Moreover, the securing of these events is increasingly mobile in terms of the issues or problems that are faced, and also the security strategies that are deployed.

Here, I highlight five main mobility issues that are encountered by security personnel at sport events.

First, the movement of sports crowds has been the longest-running concern for police and security forces with regard to safety and security. For example, in football, the free movement of crowds has been associated with disorder and violence in and around stadiums, and also with some crowd disasters.

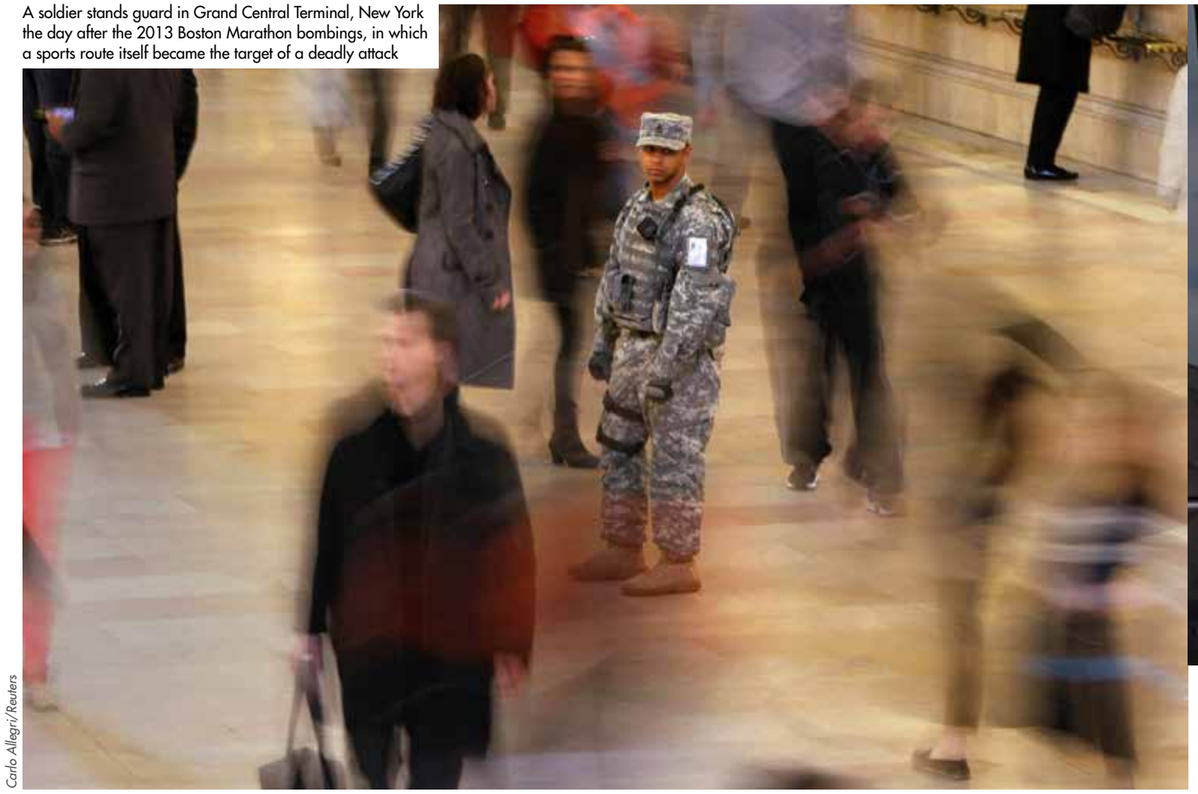
With a priority focus on security, policing strategies have sought to direct or restrict spectator movements, particularly inside stadiums. These measures have included, for example:

- the segregation of rival supporters, preventing spectators from moving freely across different sections inside the stadium;
- all-seated stadiums, which again restrict the free movement of spectators, enabling them to be monitored more easily; and
- police escorts of some travelling fan groups into and out of stadiums, town centres and cities.

However, one major concern is that excessive physical restrictions on the movement of spectators serve to undermine crowd safety. The most extreme illustration is the Hillsborough disaster in Sheffield in 1989, when 96 football supporters were fatally injured due to crowd crushing inside stadium 'pens'.

Second, in recent years, the most significant security concerns have concentrated on potential terrorist attacks on and through mobility systems. Notably, the 9/11 attacks in 2001 centred on a mobility-based modus operandi through the initial hijacking of aircraft. In Madrid, on 11 March 2004, bomb attacks on a commuter train

Excessive physical restrictions on the movement of spectators serve to undermine crowd safety



A soldier stands guard in Grand Central Terminal, New York the day after the 2013 Boston Marathon bombings, in which a sports route itself became the target of a deadly attack

Carlo Allegri/Reuters

killed 191 people and injured over 1,800. On 7 July 2005 – a day after London had celebrated the award of the 2012 Olympic Games – a coordinated group of bomb attacks was directed at the city's transport network, particularly the underground, killing 52 civilians and injuring over 700.

Hence, at major sport events, attention is given to the securing of relevant mobility networks, such as air routes, rail lines, roads, seaways and canals. Local communities that host mega-events, when discussing security concerns, tend to be particularly anxious about potential bomb attacks on public transport, such as buses and train systems.

Sport routes themselves may be considered as particularly vulnerable to attack. Such vulnerable zones include routes for long-distance competitions, such as cycling and motor-racing courses, and routes for marathon races. Perhaps the most extreme illustration was provided by the Boston Marathon bombings on 15 April 2013, when two bombs were detonated, killing three people and injuring more than 250. The bombs had been positioned near the finish line, on a major public street in Boston. It is worth noting that one significant impact of the bombings was the lockdown or immobilisation of the city of Boston for almost an entire day, as public transport was closed down and police advised people to stay indoors during the manhunt.

Another specifically event-related mobility 'target' is the special transport corridor system established for events. For example, since the 2000 Sydney Olympics, the summer Olympic Games have featured special transport routes for use by the 'Olympic family', such as athletes, coaches, sports officials and politicians. At London 2012, specific 'Games Lanes' covered up to 60 miles of roads, and were used by up to 82,000 people. These routes, with their self-identifying list of Olympic VIPs, are intended to increase mobility and security, but also become potential targets.

People power

A third mobility issue that impacts on the securing of sport relates to public protests and demonstrations, sometimes over the mobility systems themselves. For example, in Brazil, during the 2013 Confederations Cup football tournament, mass public demonstrations involving millions of people broke out across most major cities; in some cases, violent confrontations occurred between police and demonstrators.

Mobility issues were pivotal to these demonstrations. The initial focus was on mass opposition to large increases in fares for public transport. Additionally, the wave of protests was fast moving, quickly spreading from São Paulo across Brazil, moving in and around the city centres, and along public thoroughfares.

At the London 2012 Olympics, different types of mobility protest or conflict occurred. The most significant

Andy Rain/Corbis

A policeman talks to one of the London taxi drivers who stopped traffic on 17 July 2012 to protest the fact that they were prohibited from using Olympic Lanes

incident involved the Critical Mass monthly gathering of cyclists in London, which arrived outside the Olympic Park on the evening of the London 2012 opening ceremony. More than 180 cyclists were arrested by police on the stated grounds that they had been cycling on exclusive Games Lanes and had the potential to cause 'significant disruption'. More direct protests over mobility issues were made by London taxi drivers, who staged several 'go-slows' in central London, which in effect brought major roads to a standstill, in protest against their exclusion from the exclusive Olympic 'Games Lanes'.

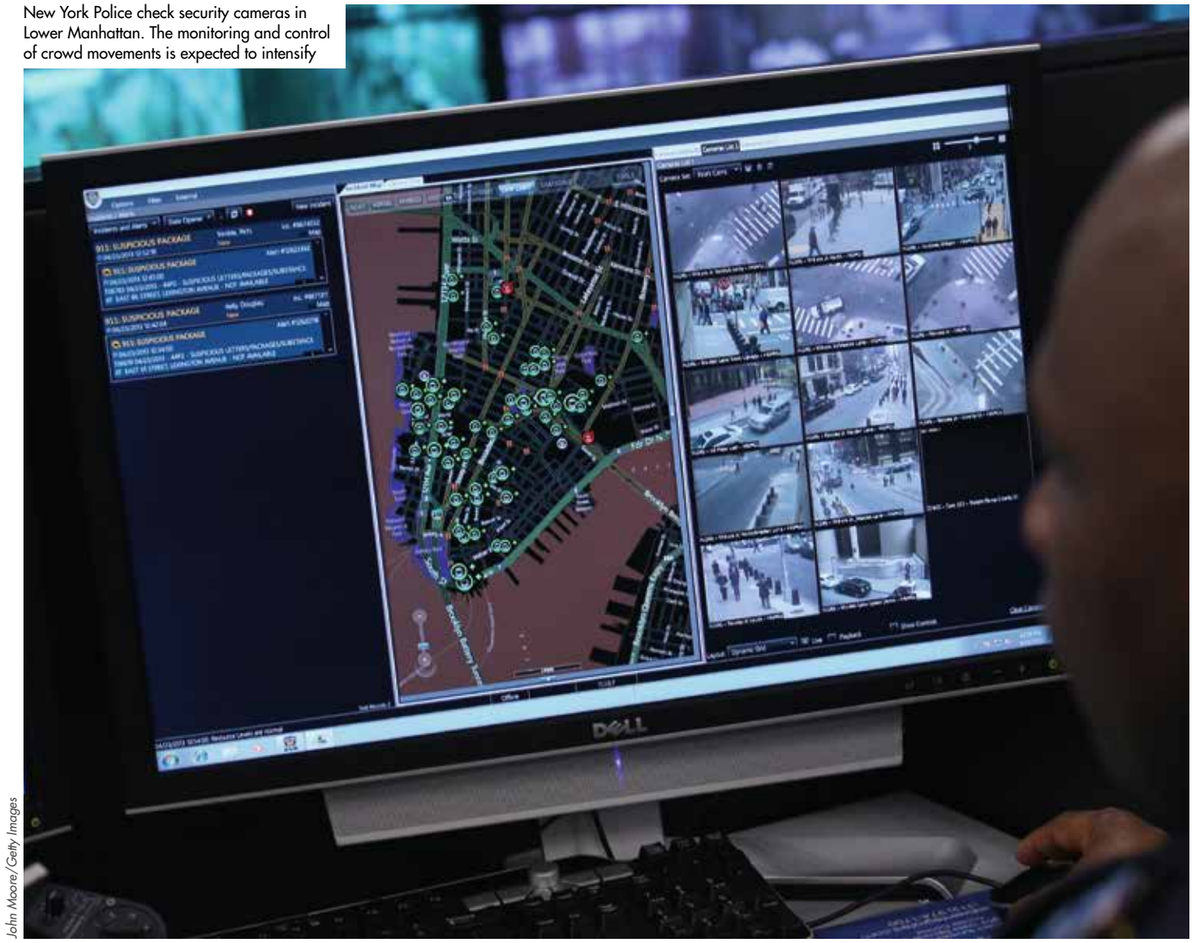
> Special transport routes are intended to increase mobility and security, but also become potential targets

A fourth issue centres on the everyday securing of mobility networks for major sport events. For example, at London 2012, the Olympic Route Network involved special road measures that extended over almost 280 miles inside and outside London. The implementation of this network, in part through policing, was a significant undertaking during the Olympic period. In addition, during such events, special parking measures are introduced, while many transport routes – such as roads, rivers, footpaths, and cycle lanes – are closed off for a host of reasons, such as to facilitate stadium construction, to enable the movement of event VIPs, or simply for 'security reasons'. All of these mobility measures tend to be highly contentious for local people living and working in event neighbourhoods. In order to facilitate their implementation, these measures also tend to require the expenditure of significant resources involving police and private security.

A fifth issue concerns the immobilization or forced movement of particular social groups; in effect, we are talking about particular 'unwanted' populations in the event area who are prevented from moving around or who are 'moved on', away from sport tourists and television cameras. Relevant populations in these cases may include the urban poor, migrants, informal clusters of young people (especially males), and those involved in minor criminal activity, such as street drinking. In some event locations, there may be a focus on moving on or removing political activists demonstrating against aspects of the event.

There are potential questions here concerning how 'security inertia' leads to the unnecessary escalation of restrictive policing for many of these groups. For example, for sport mega-events, local neighbourhoods tend to be filled with police and security personnel; as the event unfolds, and as relatively little occurs that is of security interest, so police and security personnel may fill their time by turning their attention instead towards other policing interventions, such as 'moving on' local young people.

New York Police check security cameras in Lower Manhattan. The monitoring and control of crowd movements is expected to intensify



John Moore/Getty Images

More broadly, the forced movement or immobilisation of populations highlights how the politics of the event come into direct contact with event policing. There are certainly critical issues that may be raised here over potential breaches of civil and human rights. And, such security measures in relation to these groups, quite understandably, become one yardstick by which the event is seen as potentially undermining these liberties.

Engaging with mobility issues

Overall, these five mobility issues for police and security personnel at sport events tend to pivot more on security rather than safety matters. What security strategies are likely to be put in place to engage with these diverse mobility issues surrounding sport? Four such strategies are suggested here.

First, the monitoring and control of crowd movements will continue to intensify. Over the past two decades or so, in most Western European countries there has been an increasing focus on the mobile monitoring and surveillance of sport crowds, for example in tracking such crowds by using plain-clothes police officers, cars and helicopters, and also by using CCTV cameras that are arranged throughout city centres. We may reasonably anticipate that such monitoring will grow yet more extensive as security budgets for sport events continue to rise. At the same time, any restrictions on the physical movement of crowds within stadiums need to be balanced carefully with concerns for both safety and the sociability of the sport event. The removal of perimeter fencing inside stadiums has certainly enhanced ground safety. Some countries are considering the controlled reintroduction of standing areas inside large stadiums, which would enhance atmosphere and crowd sociability while having relatively little impact on security issues.

A second, broad strategy concentrates on the integration of mobility systems in order to maximize the speed and effectiveness of reaction and proactive work. These mobility systems, focused on security and safety, would include, in particular, transport and other systems that allow for the physical movement of safety or security officials, and data or intelligence that allows for information from different locations to be accessed instantaneously, and then acted on. The key aim is to be faster than the potential risk or threat, to be a step ahead in terms of anticipation of the 'crisis moment'. Accordingly, we might expect that cutting-edge security and safety technologies will continue to be implemented in advance of major sport events.

Third, following from this, we might expect that the data-based tracking of individual mobility will intensify. Different electronic systems that have security ramifications here include the use of credit cards, mobile phones, and email; and, biometric security systems at airports, or facial recognition technology inside stadiums. Such systems leave 'traces' in regard to the mobility of individuals, and thus allow for these movements to be tracked or reconstructed. These systems are themselves mobile in terms of allowing information to be gathered rapidly from different locations. Again, as such information-gathering and tracking appears to be increasingly utilised by national security services, we would anticipate that these measures will become more apparent in sport, particularly in relation to how security personnel monitor identified suspects.

Safety and security impositions may immobilise visitors and local citizens

Playing it safe

Fourth, there might be a benchmarking of mobility with respect to policing and security; two such benchmarks might be considered. The first benchmarking of mobility would establish a template index that measures mobility for different stakeholders at sport mega-events, when set against agreed targets. These stakeholders would include different groups with responsibility for event security and safety, such as police units or sections, other blue-light emergency services, stadium security, event planners and managers, accident and emergency personnel and transport officials. Other relevant stakeholders here would include different spectator groups and journalists that are flowing towards, around, and away from stadiums; and also local populations whose mobility may be compromised during the event.

What is critical here is the application of the idea of mobility in practice in order to construct and to assess safety and security plans. Certainly, such planning is evident in the long-term use of rapid response units. But, in terms of strategy, the mobility focus also centres on the potential for sudden developments and huge uncertainties to occur during major incidents, as well as on facilitating the entirely unanticipated but immediate evacuation of large populations – as we have seen, for example, at stadium fires, such as the Valley Parade disaster in Bradford in 1985 when 56 people died, or the Boston Marathon bombings in 2013, which killed three civilians.

The second benchmarking of mobility should centre on the standard and diversity of security and safety measures that are implemented in regard to mobility. These should focus on the five mobility issues that are outlined above, with an emphasis on identifying best practice at prior major sport events, and implementing such measures within the benchmark framework. To pick some examples: security personnel may scrutinise how long event routes have been most effectively policed or secured at prior mega-events; they may also look at prior events to study how public demonstrations were free to move without a deterioration in the situation; and, they may examine closely how the most positively viewed events, in terms of their social activities, have facilitated the free movement and mingling of different populations.

Prior to both of these forms of benchmarking, there should be broad public discussion of what measures are to be implemented; full consideration needs to be given to which groups are most likely to be adversely affected by these initiatives, and how the balances between security, safety and civil liberties are to be established.

Important points arise here, as mega-event hosts have a dual pressure: on one hand, to demonstrate safety and security; and on the other, to maximise the positive experiences and expenditures of visitors to the event. The potential problem is that safety and security impositions may immobilise visitors and local citizens. This occurred, for example, at times at London 2012, with the result that event-related businesses and festivities lost potential customers or participants. This may also be somewhat alienating for visitors: mobility is associated with free movement, and restrictions on such movement, no matter how carefully explained in regard to the collective interest, are unlikely to be viewed favourably.

In recent times, in effect, part of the benchmarking of major sport events in relation to mobility has involved the successful establishment of fan festivals and parks. In these locations, tens of thousands of ticketless spectators are re-mobilised – no longer sitting watching the sport on television at home, but viewing the action on giant screens, while participating in public occasions, typically moving and mingling in large crowds, perhaps as the most intense illustrations of how sociable these events may become. Certainly, these 'fan fests' are the focus for diverse forms of mobile security and safety personnel. But, more significantly, they provide the most obvious settings against which to benchmark the free movement of different stakeholders at sport mega-events. ■

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Wragg/iStock images

Improvised explosive devices: lessons learnt from military operations

Major General (retired) Jonathan Shaw describes how experience gained from operations in Iraq and Afghanistan can be applied to combating the threat from improvised explosive devices at major sporting events

Since the Cold War ended in 1991, the nature of warfare has changed significantly. Most conflicts around the world have been heavily asymmetric, conforming to what British General Sir Rupert Smith termed 'war amongst the people', as opposed to battles between uniformed armies.

Low-level conflict as an expression of political dissatisfaction has become commonplace, as can be seen from recent events in Nigeria, China, Venezuela and Turkey. As the citizens' armoury has rarely extended to serious modern weaponry, other avenues of opposing the *status quo* have been found. The rise of 'wars amongst the people' has seen more improvised weapons and asymmetric tactics, as opponents of the state target the weak flank of security forces rather than take them head-on.

Weapon of choice

The rise of the insurgent has seen the improvised explosive device (IED) become the weapon of choice for attack and protest. The return of asymmetry to the battlefield has been accompanied by an accelerated adaptation of threats and responses. This has shifted the emphasis in capability development from technical excellence now, to adaptability through life. So serious has been the threat of IEDs to UK forces in foreign deployments such as Iraq and Afghanistan that, in 2009, the British Ministry of Defence set up a bespoke Counter-IED (C-IED) Task Force to create a capability across all its Defence Lines Of Development. That is what you need if you wish to combat IEDs effectively.

The threat is of concern to everyone; it is not a problem even primarily for the military. While military casualties steal the headlines, the IED threat is greater for civilians. According to the USS Joint IED Defeat Organization (JIEDDO), in the 25 months up to August 2012, just 36 per cent of global IED targets were military; the rest were a combination of civilian, infrastructure and government (see Figure 1 overleaf). In addition, from September 2012 to October 2013, there were more than 15,000 makeshift bomb explosions outside Afghanistan, and around the world incidents are increasing.

Attacking the network

'Attack the network' is the process developed by the UK for use in operations to counter IEDs and other threats. It enables planners to identify the key operating nodes and linkages of a threat network. After fusing this information to form 'intelligence', capabilities are applied to ensure the greatest impact on that rival network's ability to operate.

'Search' is the starting point for the process; the apparent simplicity and familiarity of the term belies the skill and judgment required to do it well. During military operations, search is used to determine the location and subsequent denial of IEDs and their component parts, and to gather evidence for prosecution, or intelligence for military action. Search enables targeting of the network, not just individual devices. What is more, it allows for a proactive rather than reactive posture.

> Search enables targeting of the network, not just individual devices

In simple terms, instead of focusing on systematically disposing of every IED identified and then waiting for the

Figure 1: Global IED incidents August 2010-August 2012, by target

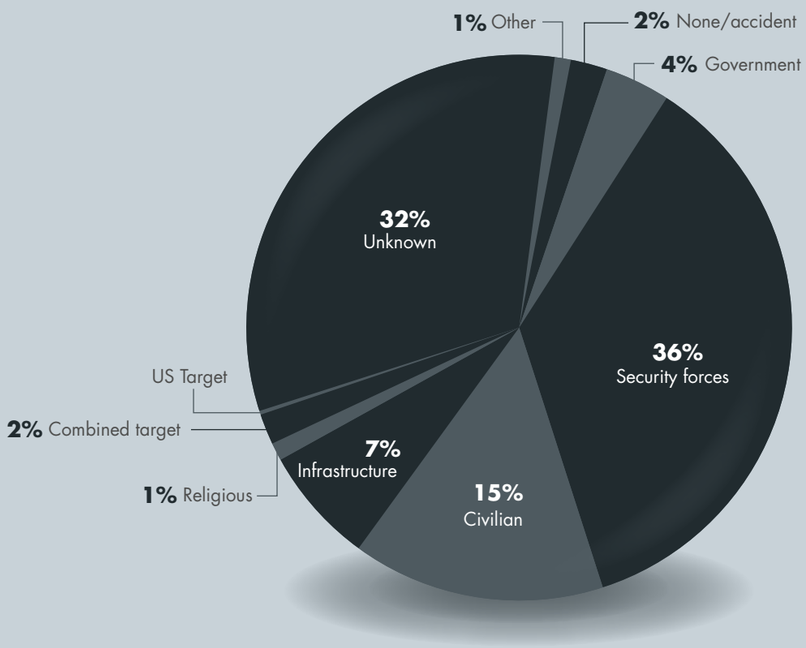
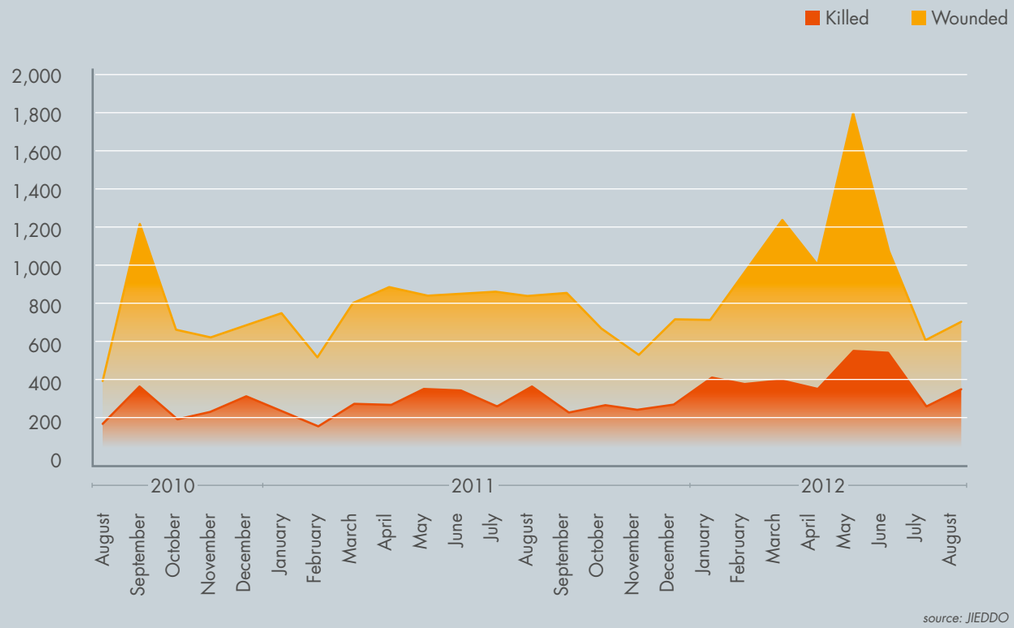


Figure 2: A 25-month summary of global IED casualties



source: JIEDDO

British police search for explosives ahead of the 2013 Virgin London Marathon

Tom Dulat/Getty Images

next one to appear, search gives the initiative to the security agents. Intelligence-driven, offensive activities designed to disrupt an adversary's IED system could include a customs official interdicting a shipment of suspicious electronic components in transit across an international border, or a commercial entity refusing and reporting the attempted purchase of a large amount of nitrate-based fertiliser by people with no discernible end use. In addition to the possible removal of any known leader (which is inadequate if there is a strong and structured set of subordinates), search might allow for the incarceration of a single network financier.

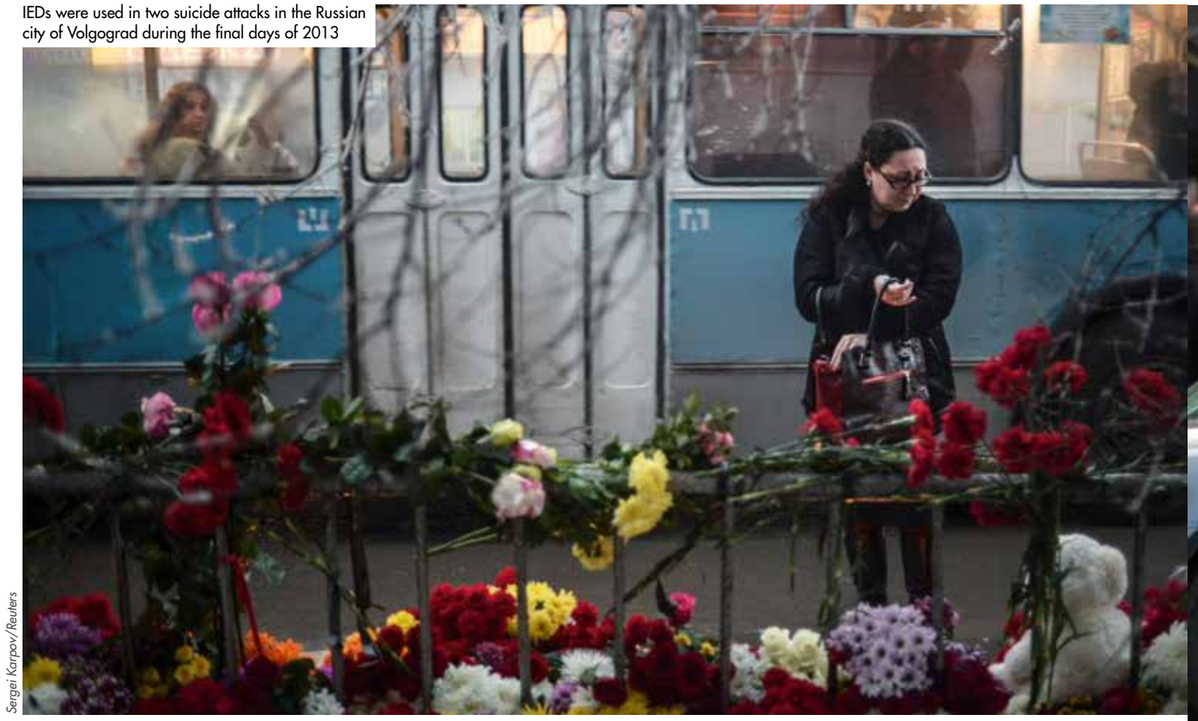
For police forces, search has become an essential tool in fighting terrorism, particularly over the past decade, and it is logical that many of the lessons learnt on military operations should be applied elsewhere. The application of search within the commercial sector is also an area that should be explored, whether this is for awareness training for personnel at a large-scale event such as the Olympics, or a higher level of search procedure instruction delivered to security guards or security managers in stadia, shopping centres or other mass public gathering venues. Managers may choose to mirror the scalable range of capabilities adopted by the military. At the lowest level, for instance, they might decide to provide counter-threat awareness training to all staff, with an enhanced capability rolled out to security personnel, so that organisations and individuals can plan, prepare and protect themselves from a range of threats, including – but not restricted to – IEDs.

Major sporting events

IEDs are designed to cause harm to people and infrastructure, often to gain maximum publicity. Major sporting events present a target for IED strikes for several reasons: crowd density, publicity, scale/range of potential targets and the challenge of securing everything. The rising threat from IEDs demands a proportionate and effective response. Incidents at the 2013 Boston Marathon and in the run-up to the Sochi Olympics highlight the problem –

The rising threat from IEDs demands a proportionate and effective response

IEDs were used in two suicide attacks in the Russian city of Volgograd during the final days of 2013



Sergei Karpov/Reuters

with Russia's then most wanted man, Chechen rebel leader Doku Umarov (now reportedly dead), urging his fighters to target the Games, and IEDs being used by Islamist militants to kill civilians in Volgograd prior to the event.

By taking some basic but necessary steps, organisers can enhance their reputation by delivering a safe and secure event. These steps can be summarised as follows:

- **Lay strong foundations.** To fully understand the threats that may emerge, as well as the latest attack planning methods and cycles, organisers need to take advantage of best-practice counter-threat and search standards and procedures where possible. A security culture needs to be instilled from the outset via well-designed and -delivered training courses that, in the best case, already exceed and can accommodate rises in the current Security Industry Authority (SIA) standard. This in turn will facilitate consistent, high-quality and resilient security training for all levels of staffing – from stewards to event managers, and covering stadia and public spaces.
- **Place security at the heart of planning.** Defensive search applications must be central to planning from the outset, and so deeply embedded that no one notices the security milestones that have been overcome. But organisers will need to ensure priority is given to delivering a top-class sporting event with a meticulous security overlay, as opposed to a security operation with a rather inconvenient event taking place in the middle of it.
- **Scale up and down.** At an international event, the throughput of people will not be a gentle, steady flow, but will peak and trough. Security needs to have capacity to ramp the protective measures up and down, in line with the threat, in a seamless and unobtrusive manner.
- **Outsource to specialists.** In the case of a high-profile event such as the Olympics, there are specific difficulties – for instance identifying who the VIPs are and what infrastructure needs protecting. Additionally, given the current threat and terrorist tactic of attacking 'soft' targets (relying on media coverage to spread the word and fear factor, thus magnifying the effect), ever-larger 'safe zones' are required. These two issues provide a significant challenge to the security services, as the number of areas and people requiring their protection exceed their organic capacity. One solution is to bring in contractors to take some of the burden. Choosing specialist contractors can help to ensure that organisations have the required capability. This is becoming increasingly common as police funds and numbers decrease. At the London 2012 Olympics, police needed to rely on additional manpower to protect people and infrastructure. While this responsibility fell in large part to the army, the private sector was still responsible for securing areas where the threat assessment deemed there to be a lower risk.
- **Develop adaptive solutions.** The IED epitomises the current asymmetric evolutionary threat environment. No off-the-shelf answer will be sufficient. A comprehensive response will need to be bespoke and adaptive: an evolving proactive posture of attacking the network offers the best response. This demands end-to-end capability development that feeds off the latest operational experience and best practice. Only then will sporting events have the best chance of being conducted without the blight of terrorism.

Given the current terrorist tactic of attacking 'soft' targets, events require ever-larger 'safe zones'

Police prepare for the controlled detonation of a suspicious object as they hunt for one of the Boston Marathon bombing suspects

Lucas Jackson/Reuters

Organisers increasingly recognise the fundamental significance of safety and security at their events. Prioritising security in planning, right from day one, will help to prevent lives being put at risk. Those on the committee board need to consider several key components, such as the appointment of a strategic commander for safety and security. They must ensure thorough pre-operational planning, ranging from venue construction through to perimeter management across the stadia, as well as in residential, catering and hospitality settings. It is imperative that suitable staff are properly trained well before the event, and mentored throughout. ■

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PhotoAlto/Alamy, Mipan/iStock Images

Securing the World Cup

Rafael Saliés and **Samuel Logan** profile the 2014 FIFA World Cup host cities, outlining the safety and security issues that are likely to be encountered in each

When Brazil hosts the World Cup this year, it will feature extremes driven in large part by the cultural and geographical disparity between its 12 host cities. From the hot climates of Manaus, Cuiabá and the cities of north-east Brazil, to the southern latitude and winter cold of Porto Alegre and Curitiba, football fans who travel across Brazil must adapt to a country the size of half a continent.

Meanwhile, local protests about poor public services and politicians will be interspersed with fans celebrating the tournament. At some extremes, smaller host cities will be divided, forcing revellers and protesters to move among each other. Concurrently, the Brazilian presidential and gubernatorial electoral cycle, which begins in early July, will give the 2014 FIFA World Cup a political backdrop rarely seen in the tournament's history. Climate and culture, festival and protest, politics and poverty will all clash during a World Cup that is sure to make history, not for the failure of the Brazilian government's preparations, but for how those preparations manage the challenging balance between mitigating significant security concerns and allowing Brazilians to exercise their right to speak out against their government, when they know that the whole world is watching.

Each host city faces its own challenges in maintaining this balance. However, at the risk of generalisation, cities can be organised loosely into four different groups that take into account infrastructure preparation, criminal threat and the risk of civil disobedience or protest. For the purposes of this article, group one holds the cities where protests are the main challenge: Rio de Janeiro, São Paulo, Brasília, Belo Horizonte and Porto Alegre. Criminality and protests are equally challenging for group two cities: Fortaleza and Salvador. Crime is the main threat for the group three cities: Natal, Cuiabá, Manaus and Recife, where protests are least likely to affect the World Cup. Finally, only Curitiba, the single city in group four, has infrastructure issues as its main concern.

Group one: cities affected mainly by protests

Rio de Janeiro is the centre for the World Cup. It will host the largest number of games, and will be the most sought-after location for football fans from overseas. The FIFA media centre is located in this city. Furthermore, Rio's dual role as the 2016 host of the Summer Olympics places added pressure. Preparations by the 'Cidade Maravilhosa' (Marvellous City) for the World Cup are the quintessential representation of group one: a city that has had trouble dealing with constant protests and the violence that these protests can generate. Since June 2013, Rio's inhabitants, known as Cariocas, have organised almost weekly protests of various sizes and causes. Initially non-violent, protesters have increasingly engaged in skirmishes with the police. Their confrontational posture is partially a reaction to police tactics recorded at the outset of this latest rising trend of protests, which began in late June 2013. Rio de Janeiro is a city that retains a distinct edge and energy on the street, and as police continue to present hard-nosed options for managing crowds, protests are likely to be violent, regardless of the size or location across the city. People on the street expect to protest – from those with legitimate political grievances to young people looking for a thrill. Visitors should prepare for protests to be large, disruptive and at times violent.

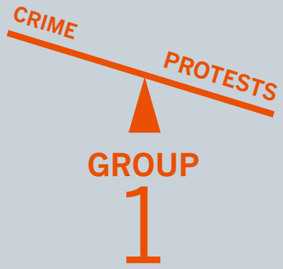
> Visitors should prepare for protests to be large, disruptive and at times violent

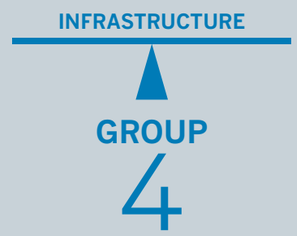
Confronting this reality, local and federal government administrations plan to deploy more police officers to counter what they consider to be civil disobedience (see Barrick, p42). Constant protesting over the past six months has spurred criminality throughout Rio; in response, the state government has channelled law enforcement resources into riot control. Criminality should be considered apart from the city's traditional criminal groups, which are unlikely to disrupt the World Cup. Their motivation is purely economic. More tourists translate into increased drug sales, and violence is bad for business.

São Paulo, Brazil's largest city, where drug trafficking groups will also look to benefit from a windfall in sales, was the epicentre for the explosion of popular unrest that led to the June 2013 protests. Social movements in the city have maintained monthly protests since then. Some demonstrations have ended in violence, with protesters

Security and safety

Figure 1: The balance of issues affecting the 12 World Cup host cities, by group





Pingebat/iStock Images

employing so-called 'Black Bloc' tactics modelled on the anti-globalisation groups that gathered in Seattle in 1999 and Europe throughout the past decade. For their part, police are equally responsible for the surge in demonstration violence. While initial demonstrators were peaceful, documented police repression turned protests into riots and police violence left only those extremely dedicated to confronting the state on the street.

The state capital of Minas Gerais, **Belo Horizonte**, contains several well-organised social groups that have maintained a steady flow of protests since June 2013. The most important of these are Comitê Popular dos Atingidos pela Copa 2014 (Committee of those affected by the World Cup; COPAC) and Assembleia Popular Horizontal de Belo Horizonte (Horizontal Assembly of Belo Horizonte; HABH). Politically, both groups are left-leaning and promote awareness of the social effects of World Cup preparations, such as forced removals and lack of investment in social priorities. COPAC and HABH are preparing for June and July 2014, and they are fundamental to gaining an understanding of protests in the city, as they are the main organisations to concentrate social movements and people affected by World Cup preparations, leading the social media campaign #naovaitercopa charge in the city.

The Military Police of Minas Gerais (PMMG) is preparing for the confrontation, and will likely employ more force this year than in 2013. The stadium's perimeter in Belo Horizonte is a natural concentration point for protesters; there are low-income communities whose inhabitants are expected to join those demonstrating once they get to the perimeter. Evaluating the lessons learned in June-July 2013, the PMMG believes it was too lenient with protesters, which led to an accumulation of demonstrators. The force will not allow this to happen again. Early dispersal of organised groups could affect ticket-holders who will walk through the crowd to reach stadium entrance points while the PMMG showers protesters with tear gas, rubber bullets and flash bang grenades. This potential hotspot will be particularly challenging: foreigners will mingle with Brazilians exercising their right to protest, faced off against a battalion of riot police determined not to make the same mistake twice.

Brasília, the national capital, has experienced concentrated protests and social movements since at least 1988 when Brazilian legislators drafted a new constitution. The city sees nearly constant protests from Brazil's active and strong landless movement, indigenous rights activists, plus environmental groups among others. While other cities were dealing with their own protesters in June 2013, in Brasília, demonstrators stormed congress and danced on rooftops. Protesters surprised congressional police, and the federal district's military police were not deployed owing to jurisdiction conflicts. The latter were present at the Mané Garrincha stadium, however, where they managed to separate protesters and football fans before the 2013 Confederations Cup opening match. The area around the stadium is a wide open plain, which local law enforcement considers ideal for crowd control. Military police are confident that their preparations will be ideal for handling both football fans and potential protesters, and will not be surprised twice, avoiding the storming of other monuments or congress itself. Protests aside, crime is rare in the Brasília area of the Federal district.

> The national capital, Brasília, has experienced concentrated protests and social movements since at least 1988

Brazil's southernmost capital, **Porto Alegre**, is a traditional centre for social unrest and leftist movements in the country. Protests in June 2013 were violent even before military police intervened. However, the state government has opened dialogue with social movements. It would prefer to avoid any clashes when the World Cup starts, though it will not hesitate to use force. Protesters are not the only concern. The Brazilian Federal Police are in contact with their Uruguayan and Argentine colleagues to monitor the movement of ultras (extremist and sometimes violent sports fans), known as barra brava, from both countries across the border north into Rio Grande do Sul. The state has a long and porous border with both countries, and authorities are preparing to expel any known violent individuals pre-emptively.

The Argentina versus Nigeria game set for 25 June offers an opportunity for Argentina's notorious ultras to present a show of force. Both Uruguay and Argentina will play their other games further away from their home countries in cities such as Natal, Rio de Janeiro, Belo Horizonte, and Fortaleza, whose distance from Buenos Aires and Montevideo reduces the likelihood of a large number of barra bravas in attendance.

Group two: criminality and protests

The city of **Fortaleza** is home to beautiful beaches and a local population that is receptive to outsiders and dependent on tourism, but it is a city with considerable public security challenges. While Rio and São Paulo saw a downward trend of violence in the past 10 years, Fortaleza's murder rates reached 72.81 per 100,000 people in 2013, an historic milestone.

Compared to statistics in some of Latin America's most violent cities – such as Caracas, where the NGO Observatorio Venezolano de la Violencia records the homicide rate at 134.3 per 100,000 – Fortaleza faces a public security challenge that is perhaps based more on perception than reality, due to the fact that most victims in Fortaleza remain restricted to those in the lower class and individuals engaged with the criminal underworld – a violence that discriminates. By comparison, murder in Caracas is indiscriminate and for that reason alone significantly more troublesome.

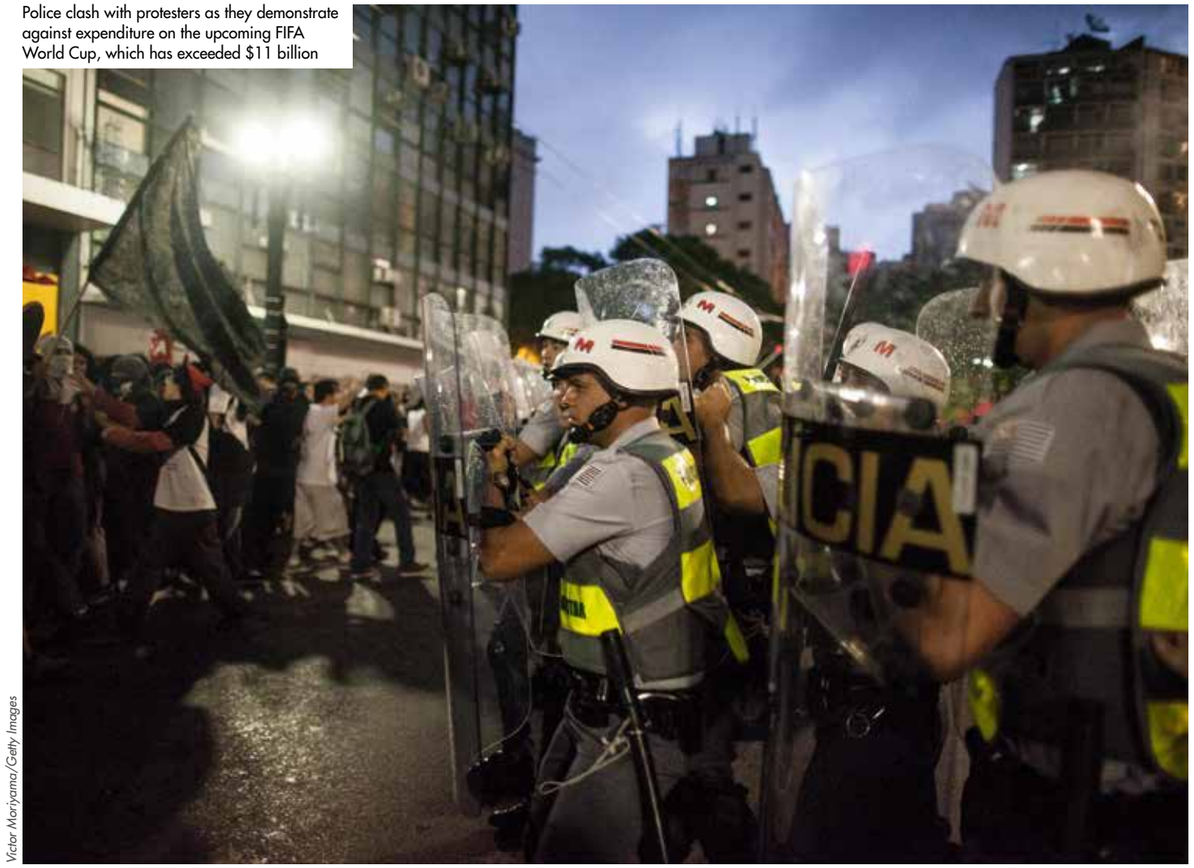
Protests in Fortaleza were expansive and violent during the 2013 Confederations Cup. Much like Rio's Maracanã, Fortaleza's Castelão stadium is located inside the city, and demonstrators can easily walk to it. The Castelão stadium has a considerable low- and mid-income population around it that will join the protesters. Local police do not have the resources to contain expected protests. During the World Cup they will depend heavily on federal law enforcement and the military to secure the city. Meanwhile, military police have gone on strike twice in the past four years in the state of Ceará, of which Fortaleza is the capital, and there is a looming threat that they might do it once more during the World Cup.

Before Rio de Janeiro, **Salvador** was Brazil's first capital and is the centre of Afro-Brazilian culture. This iconic city was perhaps one of the most problematic during the 2013 Confederations Cup. After protesters threw rocks at official FIFA cars and buses, FIFA prohibited teams in the city from leaving their hotels. Police engaged violently with protesters while holding the stadium perimeter.

Salvador continues to struggle with a long-term increase in criminality, partially driven by chronic economic malaise. It is worrisome that an examination of the city reveals violent crime – while decreasing city wide – has increased in its more affluent neighbourhoods of Pituba, Rio Vermelho and Barra. Salvador, like Rio, is a city of contrasts, with an affluent middle and upper class living in close proximity to working class neighbourhoods. Heavily armed gangs control a concentrated amount of territory in the marginalised areas, and are a constant challenge to the state. These gangs are numerous and not as large or organised as the more notorious groups based in Rio de Janeiro or São Paulo. They are less likely to reduce their criminal activity because the promise of windfall drugs sales is not enough to dispel conflict between the disparate groups, who need to control territory as a priority for existence, not just as a matter of economics. The armed forces, and federal and state law enforcement, will juggle both protest duty and policing, ensuring crime does not stain the city's touristic image.

Group three: cities affected mainly by crime

Cuiabá is a small city located in one of Brazil's westernmost states. Protests in 2013 were small



Police clash with protesters as they demonstrate against expenditure on the upcoming FIFA World Cup, which has exceeded $11 billion

Victor Moriyama/Getty Images

compared to other Brazilian capitals, and largely non-violent. As a city on Brazil's frontier, Cuiabá deals with a series of problems that fuel crime on its periphery and between its citizens. Locals commonly resolve personal offences and trivial conflicts by brute force, often with firearms, in an area of Brazil where a man's ability to defend himself violently is still valued.

The city is also located on one of Brazil's main drug routes from Bolivia. The geography of being a logistical stopover between Bolivia and São Paulo fuels a vibrant local drug market, served by small gangs who drive the area's murder rate. Long-time residents consider the current situation of the city a change from its calmer past. Observers in the police and academia are quick to point out that outside certain, peripheral areas of the city a visitor is likely to pass through unscathed by crime. The local police, though limited in resources, are capable of securing World Cup matches, especially with the backup of federal law enforcement and the armed forces.

At the other end of Brazil, its easternmost capital **Natal** is a near opposite of Cuiabá – especially considering the capacity of local law enforcement. Although homicides are also mostly restricted to areas of the city far from the main tourist centres and the game venue Estadio das Dunas, Natal's police forces are underpaid, understaffed and poorly equipped. Specialists here consider the state government's investment in its police forces negligible, and foreign observers can easily see the results. Local precincts are situated in decrepit buildings and open only during the working week, from 09:00 to 17:00 hours. Military police vehicles have limited fuel for a week's worth of patrolling, and training is curtailed. As a result, local law enforcement in this part of the country will be more dependant than other host cities on the federal government. Limited training and integration will complicate coordination between the various law enforcement and support organisations.

Manaus, the capital of the state of Amazonas, is a major Brazilian city, hemmed in by the Amazon forest on one side and squeezed by the Negro river on the other. Manaus experienced major, non-violent protests during June 2013. The city is a transport hub in and out of the Brazilian hinterland. Its location and the free trade zone contribute to the considerable criminal presence in the city, though crime has decreased in the past two years. Brazil's largest criminal groups – the Comando Vermelho (Red Command; CV) and Primeiro Comando da Capital (PCC) – operate in the city, transporting drugs and arms from Colombia and Peru to their main base of operations in Rio and São Paulo.

Local criminals have also organised themselves, forming the group called Família do Norte (Family of the North; FN). The FN controls the prison system in Manaus and has driven up the murder rate by actively pursuing PCC members throughout the city. Local authorities have transported FN leadership to other Brazilian states to hurt the group's coordination, as well as stepping up policing throughout the city to secure it.

Recife, the second most important city in northeast Brazil, and former centre of power during Dutch Occupation of the region, has had problems dealing with protesters since June 2013. However, the location of the stadium prevents any concerns regarding this summer's World Cup. The Arena Pernambuco is positioned outside Recife and requires a long commute on public transportation. Protests are unlikely to disturb the matches. However, the city itself used to be Brazil's murder capital in the 1990s and early 2000s.

A successful government programme, known as Pacto pela Vida (Pact for Life), presented a holistic approach to public security that began in 2011 and has improved the situation since then. Homicide rates have dropped from 73.67 per 100,000 people in 2006 to 28.82 in 2013. The programme targets the city's most violent neighbourhoods, which have been struggling since before the use of crack cocaine spread throughout its population. For the World Cup, Recife's safety will only improve, though the city's extreme poverty might still leave visitors with a lasting impression of distance between Brazil's haves and have-nots.

Group four: infrastructure concerns

Unlike most Brazilian state capitals, **Curitiba** is a city without a clear historical identity, and this has allowed it to create its own in the past 50 years. Politicians here pride themselves on the city's planning and infrastructure, and this is reflected in the relatively low crime rate. Crime that does occur is usually away from tourist areas, and from the stadium, Arena da Baixada. In June 2013, protests saw limited violence between police and demonstrators, and this trend continues in 2014.

The stadium is this city's principal challenge. The football club that owns it, Clube Atlético Paranaense, had only enough capital to maintain construction until the end of February 2014. Brazilian authorities refused to help until 18 February, when the state of Paraná announced that it would lend around $28 million to the club. The stadium will be finished in late May. FIFA is extremely unhappy with the problems it has experienced in Curitiba, since the city has demonstrated the most troublesome execution of all the stadia projects.

As the 2014 FIFA World Cup approaches, Brazil finds itself poised between re-doubled security forces across the country and an unprecedented opportunity to protest a raft of grievances that significant segments of Brazilian society have harboured for decades. The government's decision to prioritise investment in stadia and event-related infrastructure that has limited long-term value – while delaying other projects – places abundant ammunition in the hands of even the most reasonable social organisations.

Keeping the peace

The routinely organised political protests that occur during a presidential election year, which are protected by the Brazilian constitution's guarantees of freedom, further complicate the need to ensure public security. Brazilian police and military are already under pressure to protect foreigners under the gaze of the rest of the world. Never before have Brazil's public security forces been so challenged to keep the peace without the use of excessive force, historically a default setting.

Supporters from overseas will likely feel a limited impact of what is sure to be convulsive social upheaval

The World Cup will be a success. Games will be lost and won. Fans, both Brazilian and foreign, will cheer and cry. Supporters from overseas will likely feel a limited impact of what is sure to be convulsive social upheaval across many cities and around the stadia perimeters. Tear gas may cause some discomfort; shouting protesters may complicate entry at some stadia across the country; and, visitors may catch a glimpse of Brazil's public security forces at work. In spite of such disruptions outside the stadia, the World Cup games will occur and will be safe.

The fallout for Brazil, however, is of greater concern. The Brazilian government has failed to convince Brazilians that hosting the World Cup was best for the people and not just the country's international image. Having failed that initial test, what remains is essential to Brazil's future. Are the country's security forces adroit enough in organisation, integration, intelligence, communication and limited use of force to show Brazilians a new approach to riot control and crime prevention? Indeed, the result of this balancing act is one shot at proving to itself that Brazil has essentially completed its transition to democracy; progress initiated with the 1988 constitution. Failing that, the Brazilian government will have again disappointed its people. ■

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Brazilian special forces prepare for World Cup security

Nathan Barrick outlines the role and organisation of Brazilian special forces in providing a secure environment for the 2014 FIFA World Cup

With the 2014 FIFA World Cup four months away, Brazil's President Dilma Rousseff said at a press conference in February: "Armed forces are already training for the event in association with police and other enforcement authorities at local, state and federal level."

President Rousseff's country is already feeling the heat of the international spotlight ahead of the event in June and July, and this is likely to continue as Rio de Janeiro prepares for the 2016 Olympics and Paralympics. Widespread popular protests at FIFA's Confederations Cup in June 2013 raised concerns about Brazil's ability to secure major sporting events (MSEs), but its senior security leadership has reiterated the country's preparedness and highlighted the successful provision of security at the Confederations Cup despite these protests.

The scope and scale of the unrest surprised officials and forced the activation of the National Public Security Force (FNSP) to assist military and civil police units around Brazil in controlling protest violence. Images broadcast around the world showed massive crowds, stalled traffic, burning tyres and police using tear gas; however, no sports venues were disrupted, no games delayed, and fan safety was not a problem.

With protest themes including excessive government expenditures for MSEs, the effective security plans and government responsiveness drew a clear line between the political problem and the security problem. Brazil's leaders emphasise that its citizens have a democratic right to conduct political protests and they have shown restraint in controlling continued protests over the past several months, by teachers in October 2013 and over a bus fare increase in February 2014. While the country is addressing the political problem, its leaders are focused on ensuring that any potential protests do not disrupt upcoming MSEs. Recognising the potential scale of protests, officials have modified security preparations for the World Cup by proactively mobilising up to 10,000 FNSP members.

FIFA leaders devoted due diligence to investigating Brazil's preparations during recent visits and have expressed confidence in the approach to security.

> Brazil's leaders emphasise its citizens have a democratic right to political protest, and have shown restraint

FIFA Secretary General Jérôme Valcke told a media conference in February 2014: "We are expecting a quiet World Cup and we are expecting that whoever wants to be at the World Cup will have the right to do so."

FIFA security adviser Andre Pruis, who supervised safety and security at the South Africa 2010 FIFA World Cup, said: "In Brazil we are working as one team from the development of operational concepts right through to policies and procedures. I think the stadia in Brazil not only meet the requirements of FIFA but exceed them. I think it's going to be a wonderful World Cup."

This confidence stems from the security success of the Confederations Cup and from Brazil's record of success in providing security in the past for MSEs and other high-profile international summits. The country's

Lunae Parracho/Corbis

Police special forces train to operate against drug gangs in Salvador, one of the 12 host cities for this year's World Cup

Securing the 2014 FIFA World Cup: the national picture

Pingebat/iStock Images

success is an outgrowth of its effective organisational approach to public security, including civil-military cooperation in guaranteeing public law and order.

Public security framework

Brazil's public security approach is complex, and in certain respects very different from other countries' integration of military and law enforcement agencies. In Brazil, at the national level, the Ministry of Defence and the Ministry of Justice are distinct cabinet-level posts with clearly delineated areas of responsibility for national security and law enforcement. Brazil's laws allow for the use of military forces in public security, under the auspices of two concepts: a guarantee of law and order clause (article 142 in Brazil's constitution) and the role of military police in each of the semi-autonomous states. The three branches of armed forces – the army, navy and air force – are responsible for protecting the country's borders and airspace, strategic infrastructure and maritime areas, as well as engaging in counterterrorism activities. Brazil's states have military police, who control and secure public order, and civilian police, frequently without uniforms, who handle investigative work. In some states, especially populous São Paulo and Rio de Janeiro, both forces have

Vanderlei Almeida/Getty Images

Anti-kidnapping police commandos advance during a drill at Antônio Carlos Jobim International Airport in Rio de Janeiro

special operations units, similar to special weapons and tactics (SWAT) teams and military special forces.

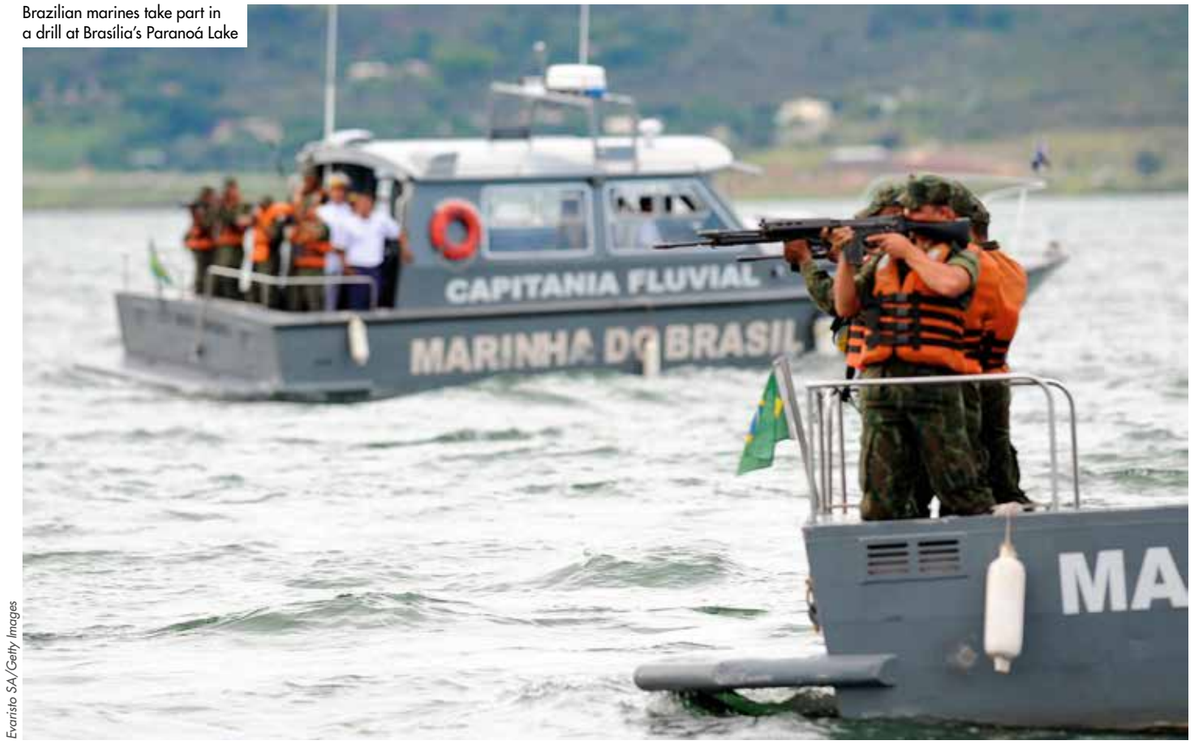
Brazil has a long history of special operations and law enforcement cooperation. In his report *Knowing Your Partner: The Evolution of Brazilian Special Operations Forces*, retired Major General Alvaro de Souza Pinheiro describes the establishment of modern special operations forces in the late 1950s, and notes that, as early as 1972, the military special operations forces conducted periodic training with civilian and military police personnel in the state of Rio de Janeiro. Out of this training grew the Coordination of Special Resources (CORE, Coordenadoria de Recursos Especiais) and the Special Police Operations Battalion (BOPE, Batalhão de Operações Policiais Especiais) – the SWAT teams of the state's military and civilian police forces, respectively. As Brazil's military special forces evolved, the training relationship with the national-level and state-level military and civil police organisations continued, on at least an annual basis.

Brazil's armed forces, specifically including the Special Operations Forces (SOF), provide Brazilian law enforcement units throughout the country with logistic and intelligence support during police operations and frequently assist in the training of police elements. The 2010 report *Convergence: Special Operations Forces and Civilian Law Enforcement* by John B Alexander specifically highlights Brazil as an example where the army SOF have a regular training relationship with the police forces. The military also provides support for public and official events, such as assisting police forces in securing international summits or operating against transnational crime and illicit activities along the border.

Part of the reason for the relationship between Brazil's military and police SOF is the extreme terrain in large areas of the country that requires specialised training and equipment. More influential, however, has been the rise of well-armed, increasingly lethal criminal gangs operating in urban areas and along illicit trafficking routes across international borders. Indeed, criminals possessing military-grade weaponry and explosives, and frequently having military experience, have forced police forces to adopt specialised methods. For Brazil, this escalation in criminal lethality has a connection to 1960s Brazilian revolutionary Carlos Marighella, whose *Minimanual of the Urban Guerrilla* has been used as a foundational training document by international terrorists.

Experience from past events

In 2007, Brazil successfully hosted the Pan American Games and faced similar issues arising from protest activity and the heightened police presence in Rio de Janeiro's favelas (shanty towns). This event was a highlight in demonstrating to FIFA Brazil's ability to host MSEs. In a two-week period, Brazil safely hosted more than 5,600 athletes in 34 sports from 42 nations. The country drew some criticism with regard to police excesses, which were noted in a 2009 Human Rights Watch report, *Lethal Force: Police Violence and Public Security in Rio de Janeiro and*



Brazilian marines take part in a drill at Brasília's Paranoá Lake

Evaristo SA/Getty Images

São Paulo. Lessons learned were implemented in a multi-year programme to emplace Police Pacifying Units (UPPs) in the favelas after heavily armed criminal groups were cleared out by BOPE with training and operational support provided by military special operations forces.

Brazil hosted the 5th International Military Sports Council (CISM) World Military Games in 2011. The army's Eastern Military Command was responsible for securing the MSE involving the participation of 4,900 athletes in 20 sports from 108 countries. SOF, including counterterrorism units and a military battalion specialised in chemical, biological, radiological and nuclear (CBRN) capabilities, were involved in cooperative security operations with civilian and military police BOPE and CORE units. The Joint Special Operations Task Force (JSOTF) established to oversee security demonstrated effective command and control and interoperability between civilian and military SOF. The event also highlighted successful implementation of Brazil's 2008 national strategy of defence guidance to ensure training and qualification of military forces in guarantee of law and order capabilities, conducted at the Instructional Center for Operations to Guarantee Law and Order in Campinas.

The established ability of Brazil's SOF in working with state-level military and civilian police forces was further developed in the security plan for the 2013 FIFA Confederations Cup. Brazil deployed 600 specially trained counterterrorism SOF members to the six host cities and incorporated the army SOF CBRN battalion (250 troops) in response planning, as well as providing an additional almost 2,500 soldiers to augment military police efforts in the host cities. A 1,200-man army unit was also designated as a reserve quick-reaction force ready to deploy within hours to assist state-level security forces if requested. Concurrent with security operations for the Confederations Cup, Brazilian military and police forces instigated Operation Agatha, involving more than 30,000 troops, to conduct a major campaign along Brazil's borders against illegal traffickers. The country's chief of the joint staff of the armed forces, General José Carlos de Nardi, commented: "We deliberately staged Operation Agatha just before the Confederations Cup because we knew that with a big event coming up there would be a significant increase in illicit activities throughout our border. The military action immediately before the games was aimed at ensuring that many of these illegal acts could not, in any way, interfere with the event."

Security for the FIFA 2014 World Cup

Brazil's security plan for the upcoming World Cup is coordinated by the Extraordinary Secretariat for the Security of Big Events (SESGE) under the Ministry of Justice. The SESGE has established technologically advanced, integrated command-and-control centres at the national level and regional centres in each of the 12 host cities. These fixed facilities are augmented by an additional 27 mobile centres for use at stadium venues and other key public and team base camp facilities. An additional centre has been designated for the integration of international support to the security effort, allowing participating nations to send intelligence and security professionals to assist in information- and intelligence-sharing in support of Brazil's security plans.

The interagency effort combines multiple federal, state and local organisations with three key objectives: preventing fan-related violent incidents, deterrence of organised criminal activities and preventing terrorist-related attacks. Brazil's armed forces have been integrated into the national-level and state-level command-and-control, planning, training support and security operations. More than 100,000 police and 18,000 armed forces personnel will be involved in surveillance and security operations, as well as the specific mobilisation of 10,000 experienced FNSP officers, specially trained in riot control, to augment state-level efforts. FNSP head Colonel Alexandre Augusto Aragon publicly acknowledged his riot-control troops will be deployed in each host city.

FIFA regulations define specific responsibilities for private and public security. Brazil will oversee public order and security up to – and in the airspace above – the venues, but FIFA will be responsible inside the stadia. FIFA will hire private security agents for this role, and more than 20,000 such agents have participated in training with Brazilian forces to facilitate cooperation with military and civilian police.

Monitoring potential instigators

Brazil has devoted special attention to the possibility of protest-related violence. The advance mobilisation and dedication of the FNSP is one resulting decision. The country is also establishing special police facilities near Fan Fest and other public viewing locations to give fans access to police support. Brazil has expanded a registry of fans with a history of violent behaviour and is working with sports clubs to increase their role in moderating fan behaviour. Its intelligence and security officials are also actively monitoring possible instigators of violence, such as the Black Bloc protest group, which has vowed to conduct protests at specific venues during the World Cup.

The country's experience in SOF and law enforcement security cooperation reflects an increasing global trend in these relationships. Brazil has legal foundations governing the interaction of military and police forces, as do other countries, and these are adapting to changing security dynamics. Brazil is expected to pass an anti-terrorism law presently, building upon procedures already evident in practice. This law will define terrorism as any act that causes terror or panic in society by threatening a person's health or liberty, which has implications for those advocating violence as a tool in popular protests.

The increasing lethality of criminal organisations and the nexus between illicit trafficking and terrorist groups blur discriminating lines between police and military national security responsibilities. While some observers are concerned about SOF involvement in law enforcement, it is fair to say that when properly governed by legal constraints, elite security cooperation yields benefits for both types of organisation. Training and interoperability affect personnel on both sides of the fence – the law enforcement units gain access to specialised training and equipment developed by military SOF; while military SOF are exposed to law enforcement requirements, such as minimal use of force, and rule of law processes such as evidence chain of custody and warrants. Additionally, both military and police SOF share a common human resource pool of highly trained and qualified professionals, who frequently transition from military to police roles.

At the tactical level, SOF units frequently operate under similar conditions and with similar missions – surveillance, intense scrutiny of terrain affecting operations, use of communications and other high-technology equipment, provision of life-saving medical aid, protection of dignitaries and VIPs, awareness of the role of animals (primarily, dogs), documentation of personnel targeting packages, and barricade or hostage situations. Increasingly, the actions of military and police SOF are scrutinised by internal and external watchdog organisations and this fact is not lost on these professionals. A Las Vegas SWAT leader in the United States identified a 'five-five rule' in training that neatly summarises this phenomenon: a leader in a stressful tactical situation makes decisions in five seconds that must stand up to five years of legal scrutiny.

A leader in a stressful tactical situation makes decisions in five seconds that must stand up to five years of legal scrutiny

Brazil's experience in the security cooperation of military and police elite organisations can be a case study for future developments in military and police SOF interoperability. Particularly, in the arena of securing MSEs – where national prestige and security implications overlap with the provision of public safety, law and order – the shared roles and responsibilities can continue to be addressed in training and operational support functions. Hilário Medeiros, head of security for Brazil's World Cup Local Organising Committee, noted that security planning in various agencies and agents "will all be crucial for use during the event, but will also remain as a legacy." This security legacy illustrates the need for continued attention to the role of military forces, and that of special forces in particular, in supporting security for MSEs. ■

Nathan Barrick is an experienced international affairs and sports security consultant and former US army major.

Visualising risk assessment for crowd safety

Risk assessment is standard practice in safety and security planning for sporting events, but important information is lost during the common written assessment process, argues **Professor Keith Still**. When it comes to assessing crowd risk in particular, he considers visualising the relevant data a more effective approach

Conventional risk assessment documents, particularly those that relate to crowd safety, typically consist of a brief description and a single value (either a letter or a number) that represents the assessed level of risk. This value is derived from the multiplication of the likelihood of the risk occurring and the consequences of that risk occurring in either evaluation of the harm caused or its equivalent monetary value. However, this process is fundamentally flawed for a number of reasons.

First, the method is biased towards overestimating risk. Second, the process is usually carried out as a form-filling exercise, with writers taking a 'cut-and-paste' approach to the development of their risk assessment. Finally, and most importantly, a person reading a risk assessment does not have enough information to address relevant crowd-safety issues, owing to the condensed format of the typical risk assessment report.

The standard crowd risk-analysis process fails the principles of Information Theory

Typical failures

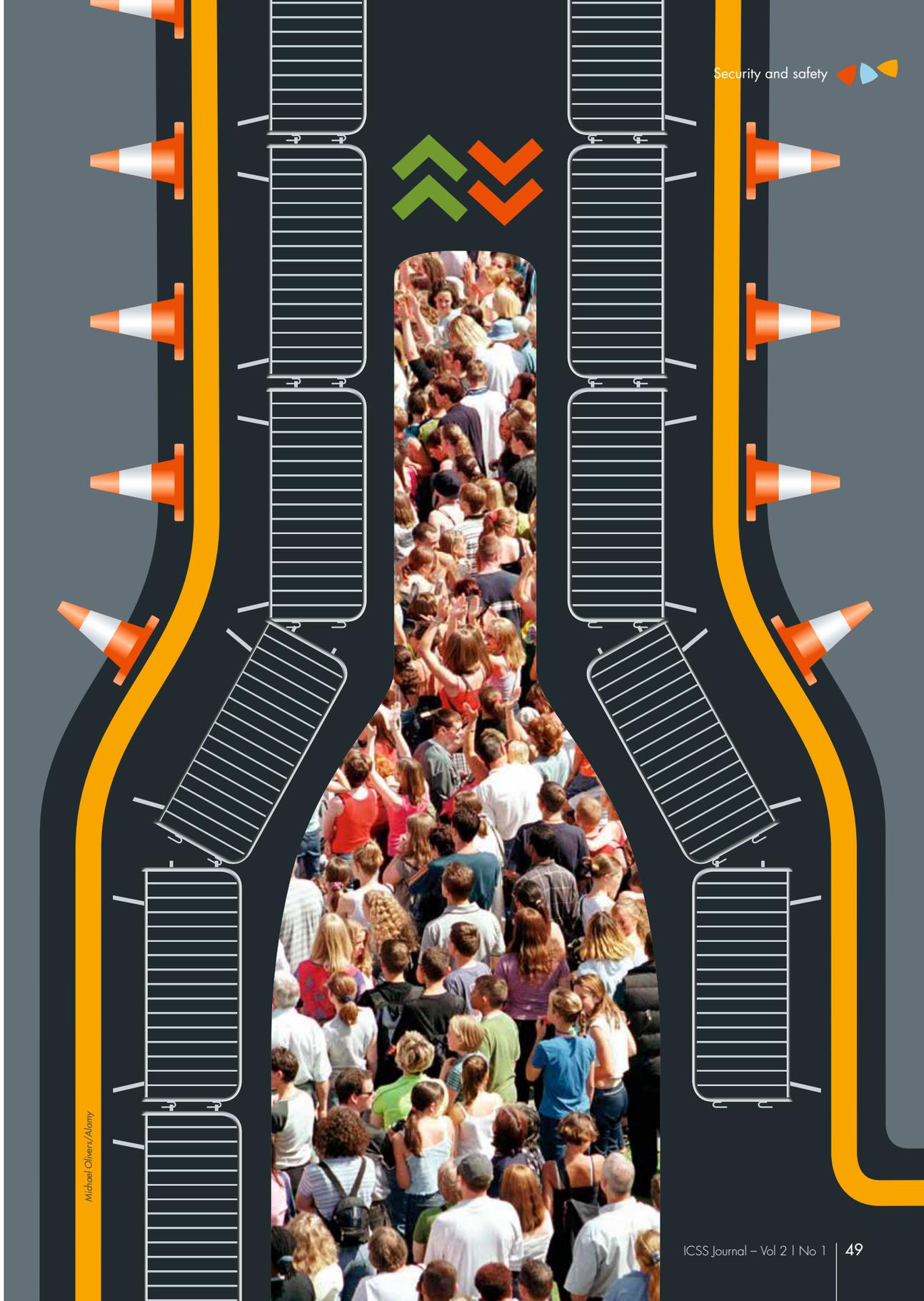
Given these flaws, the standard crowd risk-analysis process fails the basic principles of Information Theory (Shannon, 1948) in that it is impossible to reconstruct the conditions that give rise to many crowd-related risks; risks that are dynamic in nature. Crowd risks may relate to a specific location, have a short duration and/or the severity of the risk can change over time. The conventional risk-assessment document neither captures nor highlights the existence of these dynamic risks, and the failure to capture such crucial information in the risk assessment, during the planning, licensing (approval) and operations of an event involving crowds, can have fatal consequences.

My colleagues and I conduct crowd risk-analysis and crowd-safety workshops. At the start of a workshop, many a delegate will exclaim: "Phew! We were lucky that time!" before outlining their personal tales of narrow escapes – times when they felt there were significant risks to life and limb, and were lucky that no one was injured at their event. We have been collecting and collating this type of information for more than two decades and hear the same common mistakes, errors of judgment, failure to understand crowd risks and basic faults in event design in every country, at every level.

The main reason for such 'lucky' experiences (that would be better thought of as near misses) is a lack of basic understanding of the dynamics of crowd risks in places of public assembly. Furthermore, how risks can change over time is difficult to both articulate and visualise in the conventional risk assessment process. Had a more pragmatic and practical approach been adopted in the past, some of the world's major crowd disasters could have been averted.

Likelihood and consequence

Most often, a risk analysis will classify the potential risks into two defined values. The first is the likelihood of the risk occurring, while the second is the consequence of the risk occurring. These values usually form the axes in a multiplication table similar to those in Figure 1 overleaf. Typically, this numerical assignment to likelihood and



Michael Olivers/Alamy

Figure 1: Typical table showing risk as product of likelihood and consequence

Risk	Consequence				
Likelihood	1 – Minor	2 – Medium	3 – Major	4 – Critical	5 – Extreme
5 – Certain	5	10	15	20	25
4 – Likely	4	8	12	16	20
3 – Possible	3	6	9	12	15
2 – Unlikely	2	4	6	8	10
1 – Rare	1	2	3	4	5

consequence will result in a single value being assigned to a specific risk. A score of less than five will be a 'low risk', a score between five and 10 a 'medium risk' and a score of 10 or above a 'high risk'. From a numerical perspective, there are 10 boxes that are defined as 'high risk' (10/25 = 40 per cent); eight boxes that are less than five, 'low risk', (8/25 = 32 per cent); and the remaining seven boxes are 'medium risk' (7/25 = 28 per cent). Therefore, 68 per cent of the table is biased towards 'medium risk' and 'high risk'. There are numerical methods of removing this bias, but these are rarely used in the events industry.

The process is highly subjective, which leads to inaccuracies. Furthermore, as previously stated, crowd risks can be dynamic in nature, can change over time and may be specific to a location. The assignment of a single value can be both inappropriate and misleading for any risks that are dynamic in nature.

When major incidents are investigated, the risk assessment is the first document to be reviewed. One of the key questions posed at this point is: "Did the event organiser, approval/licensing officer and operations teams understand the risks during the event?"

Clearly, if the process has been poorly documented, individuals and organisations are potentially open to negligence claims. In order to illustrate how the process can (and does) go wrong, let us work through an example.

Major incidents

There are three fundamental categories of systematic failure common to all crowd-related incidents: design-, information- and management-related failures. The majority of these incidents are linked to design-related failures, where the site does not have sufficient space for the crowds. To illustrate this, let us consider a typical design-related risk that has resulted in many instances of mass fatalities: entry system design. There is a long history of disasters around entry systems. Cincinnati, US (1979 – 11 dead, 23 injured); Hillsborough, UK (1989 – 96 dead, more than 700 injured) and Love Parade, Duisburg, Germany (2010 – 21 dead, more than 500 injured) are a few examples of disasters where there was a fundamental failure to understand the risks associated with crowds entering an event. There are similar incidents from around the world where planning, licensing and operations teams all failed to understand the basic crowd-risk analysis.

Crowds arriving at an event require consideration for the throughput, the rate of passage through the system, and the holding (queueing) areas. This, in turn, must be sufficient for the anticipated crowds that are expected to arrive at the event. If the rate of the arriving crowds exceeds the rate at which they can enter, a queue will develop. If that queue develops too quickly, the space will become overcrowded and, if left unchecked, can be fatal. The same principle applies to all parts of a system in which crowds move into, move around or exit an event. If the number of people arriving at any part of a system exceeds the throughput of that part of the system, the risk of overcrowding, crushing and subsequent injury increases over time. The risk is, therefore, dynamic, as it increases over time.

> Planners need to assess from which directions the crowds may approach

Entry system design

Consider a crowd approaching an event. It may need to pass though some ticket-checking or security process in order to gain entry. We would call this an entry system. To provide a safe entry system there needs to be an analysis of the arrival profile; that is, how many people, over what period of time, are expected to enter the system? Planners need to assess from which directions the crowds may approach the entry system in order to provide some form of filtering, barrier or queueing system. This information is vital to the correct allocation of entry points and reservoir (queueing) space required to maintain a safe and orderly queue. To design a safe, robust, entry system you need to consider the routes (approach directions), the areas (space for queueing), the movement (the period of time the crowds are moving through the system) and the profile (the nature, behaviour and demographics of the crowd and how the efficiency of the system may affect the crowd behaviour). We call this a 'RAMP analysis'. This is merely a definition of the key elements that will require a risk assessment for an entry system. Let us review the recommended risk-assessment process and see how this analysis should be incorporated.

Review of risk assessment

There should be five stages of the risk assessment process. These are:

1. Identify the hazards.
2. Decide who might be harmed and how.
3. Evaluate the risks and decide on precautions.
4. Record your findings and implement them.
5. Review your assessment and update if necessary.

Using the entry system as an example, the first three steps require a competent person; someone who is trained at both designing ingress systems and evaluating throughput and queueing-area capacity. That individual must be trained to identify the potential hazards of arrival rates exceeding the system throughput at the design stage of the event-planning process. There are no defined standards of competency for this type of risk-assessment process and it is often poorly implemented. However, it is quite easy to identify this during the licensing or approval stage of an event. If you are reviewing an event-planning document, look for mention of the arrival profile and the rate of entry. If this information is missing, then it should be considered a basis for rejecting the plan.

Figure 2: A typical risk-assessment form, with spelling errors copied from old documents

Hazard and Potential Consequences	Persons at Risk	Control Measures	Risk Rating	Additional Control Measures Necessary	Residual Risk Rating
Crowd crushing and associated injuries	Members of public Employees Volunteers Contractors	Consider anticepated crowd capacity and ensure facilities are adequate, including provision of adequate facilities for refreshments, sanitary requirements, etc. Ensure there are adequate entrance and exit routes with no obstructions, which are clearly signposted. Consider the design of the venue and need for barriers to allow good entry and exit routes with no obstructions.	Medium	Event Organiser to carry out walk through visual inspection (prior to start of event) to ensure access/ egress routes are unobstructed and free from slip and trip hazards.	Low

The fourth step – record your findings and implement them – is central to the theme of this article. How are dynamic risks evaluated and recorded?

Information theory

Shannon (1948) outlined the principles of information theory. The fundamental problem is that reproducing complex information, either exactly or approximately, requires considerable language and documentation skills. Consider the risk-assessment process. Information is coded (reduced to a few lines of description and a number), documented and, later, someone has to read (decode) this information. A typical risk-assessment form looks like Figure 2, below.

As you can see, the document is lacking many of essential details. For example, there is no information about the location of the risk, whether the risk is constant throughout the event, or if it is related to crowd density or crowd flow. The 'visual inspection' outline is vague, yet it magically reduces the risk from 'medium' to 'low'. There are no specific action points or instructions on what to do if that element fails a 'visual inspection'. There is no mention as to whether the risk may be related to crowd density, rates of passage, at specific times and at what point a 'crowd crushing' manifests. The reader should note that the document complies with the requirement 'to perform a risk assessment', but it fails to identify all the key elements associated with crowd risks. Furthermore, my colleagues and I see these same words, in this

same format, cut-and-pasted from event to event, from document to document, containing the same spelling and grammar errors, year after year. The process does not encourage understanding of crowd risk, nor does it have provision for the dynamics of crowd risks.

Planners need to understand the dynamics of risk for crowds. An event will typically have three primary phases of crowd movement: ingress (during which the crowd approaches the venue and passes through the entry system), circulation (where the crowd moves around the various points of interest within the event) and egress (during which the crowd leaves the event). We can have an emergency during ingress, during circulation (mid-event) and during egress. So there are three distinct periods, each of which should require a normal and emergency/contingency plan. This fact is often overlooked, and an evacuation plan will typically only refer to the mid-event emergency. However, if the crowd is in the process of entering a system and there is a need to evacuate at that time, it is a very different set of challenges than a mid-event evacuation.

The challenge is to devise a method that is simple and provides useful information

One of the key points for a licensing officer (who either approves or grants a permit for an event) should be to review the evacuation plan. If there is no 'emergency situation during ingress' element in the plan, it should be rejected outright. The reason for stating this should be obvious: Cincinnati, Hillsborough and Love Parade are all emergencies that occurred during ingress.

It was stated earlier that the standard form of the risk assessment fails the principles of information theory, in that the information is recorded and, at some point in the future, someone else needs to pick up this document and decode the record into useful information. The problem is clear: the amount of information lost in the process. For example, the line 'Consider anticipated crowd capacity and ensure facilities are adequate' in the risk assessment in Figure 2 is missing at least three elements of information.

In terms of location: where in the system does this apply? What are the anticipated crowd capacities and arrival rates? In which facilities are there likely to be problems? How would we recognise those problems? What is the definition of 'adequate'?

In terms of duration: the entry system may have specific times at which the risks are higher (for a football match this may be the last 15 minutes before kick-off; for a concert this may be several hours prior to gates opening). Elements around the site may also be subject to time-related risks, such as transport terminals. There is no provision in the risk-assessment template to outline duration.

In terms of severity: risks may fluctuate, possibly because they are dependant on external factors. Crowd crushing, for example, may result from weather (seeking shelter), transport delays or a celebrity arrival. Many factors can influence the number of people in specific sections of an event and the risks need to relate to this. Severity can be a function of the difference of the arrival rate and the throughput rate. Queueing may be necessary.

New method required

Two things can now be deduced. The first is that the form in Figure 2 does not lend itself to the necessary description of the dynamics of crowd risks. The second is that a single value (medium, high, 15, and so on) does not represent risks that have a specific duration that may be high for a short time, then zero for the duration of the event. For instance, the moment the entry gates open, there could be a surge of movement – high risk for a few minutes, but then lower risk if the system is working efficiently. The challenge is to devise a method that is both simple to implement and provides useful information for the person who evaluates and manages crowd risks.

To do this, we need to identify the following:

- location: risk may be focused on a specific location;
- duration: risk may exist for a specific time; and
- severity: risk may have different levels of severity at different times.

Figure 3: Map of crowd flow for Duisburg Love Parade

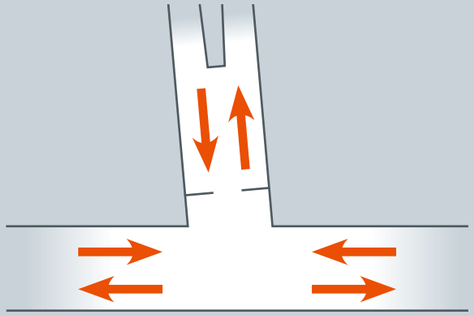


Figure 4: Diagram of crowd flow for Duisburg Love Parade at peak period

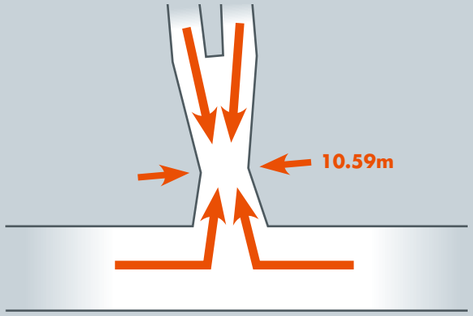


Figure 5: Example of risk-assessment drawings for key event times

The first step is mapping the risk. Take a look at the dynamic risk map (Figure 3), which shows the basic geometry of the Love Parade event in Duisburg in 2010. This is a crowd flow diagram and it is important that such diagrams are included in an event plan indicating crowd routes (direction of approach) and areas available for the crowd, thus highlighting the anticipated crowd flow (minute by minute or hour by hour).

The section in the middle of the diagram is 10.59 metres wide. The calculation for throughput is 82 people per metre per minute. Therefore, this section will have a throughput of 82 people per metre per minute x 10.59 metres. This is equal to 868.38 people per minute x 60 minutes; 52,102.8 people per hour in one direction. Figure 3 indicates that two-way flow is expected. As soon as the number of people trying to pass through this section exceeds 868 per minute in either direction, there will be a risk of overcrowding; that is more people arriving than can pass through this restriction. Fewer than 868 people per minute means low risk; more than 868 people per minute will lead to a risk of overcrowding. It should be clear that the risk would rise in proportion to the number of people arriving in excess of the 868 people per minute throughput rate. Therefore, this risk is not a single value, but a value that is a function of the arrival rate.

The area is also limited. The capacity (the number of people who can occupy that area without risk of crushing) is therefore a function of the difference between the arrival rate and the throughput rate. Maximum capacity should be indicated, area by area, moment by moment. A series of diagrams, with each representing an hour, should be the minimum requirement to understand how crowd risks may be developing. Each diagram will need to show the crowd flow against the fundamental geometry of the site.

The diagram in Figure 4 should highlight the value of illustrating the risk analysis. It will be clear to all that had such a diagram been included in the event plan, even the lay person would have recognised a problem.

A picture paints a thousand words, as they say. But a thousand words in a risk analysis or event plan can be difficult to visualise. Try drawing your event, illustrating the crowd flow and the directions of approach. It is sensible to colour areas of high risk red, medium risk orange and low risk green. Do this for a series of diagrams, each illustrating a part of the site at a different time (see Figure 5, left). You will then have mapped the dynamics of risk in such a way that a lay person can pick up the document and understand the location, duration and severity of a dynamic risk.

While this pen-and-paper exercise may seem basic in an era of super-computers and sophisticated crowd modelling simulators, the point remains that the essential information about risk can be gathered, preserved and communicated with a simple, graphical procedure that can be followed at even the smallest, least-resourced event. ■

Keith Still is a crowd science specialist who lectures at the UK Cabinet Office Emergency Planning College. See www.crowdriskanalysis.com for educational materials.

Time for change: US sports betting regulation

Kevin Carpenter argues that the US should play a greater role in stamping out match-fixing in sport

AP/PA Images

Charles Arnold 'Chick' Gandil (with bow tie) during the investigation into alleged match-fixing at the 1919 baseball World Series

Match-fixing has drawn the attention of governments in Europe and Asia in the past two years for several reasons, including the badminton scandal at the London 2012 Olympic Games; the recent Europol announcement that 680 football matches were suspected of being fixed worldwide, implicating 425 match officials, club officials, players and criminals; and the arrest and questioning of some of the most wanted criminals in the field. Yet in the United States, considered to be one of the big closed danger markets for sports betting, it does not appear to be particularly high on the agenda for either government or sports governing bodies (SGBs).

What drives match-fixing?

Match-fixing in its various manifestations can be defined as a dishonest activity by participants, team officials, match officials or other interested parties to ensure a specific outcome in a particular sporting match or event for competitive advantage and/or financial gain that negatively impacts on the integrity of the sport.

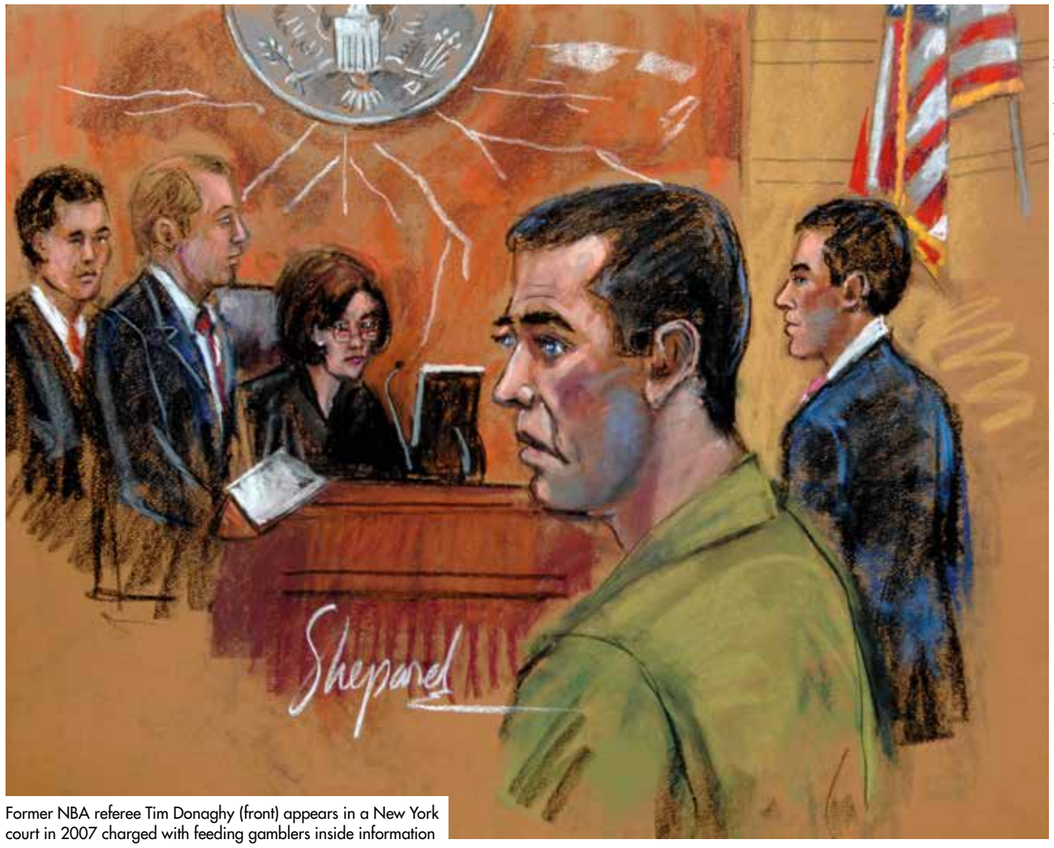
The practice can be broken down into two strands: betting-related and sporting-motivated fixing. There has been a greater focus on the former, principally because of the significant associated money flows that are vulnerable to fraud: Interpol suggests that sports betting is now a $1 trillion-a-year industry. This honeypot has inevitably attracted the involvement of organised crime – an issue and term that might have a greater impact on key stakeholders, particularly politicians, than match-fixing *per se*.

Betting-related match-fixing is now driven by high-level and increasingly sophisticated criminals operating and collaborating worldwide. They have been able to take an increasing stranglehold on sports as a direct consequence of globalisation and technology advances that have facilitated growth in the number of betting possibilities (including the advent of in-play and spread betting); new forms such as betting exchange; and new operators based in less-regulated jurisdictions, but available to punters worldwide.

The practice is not a new phenomenon in the US or North American sports generally. One of the most notorious proved cases came from the 1919 baseball World Series. The match-fixing conspiracy was organised by Chicago White Sox player Charles Arnold 'Chick' Gandil, who had longstanding ties to underworld figures. New York gangster Arnold Rothstein financed the crime through his lieutenant, former boxing champion Abe Attell.

Gandil enlisted several of his teammates who were motivated by resentment of their miserly salaries. A year later, a grand jury was convened to investigate the alleged scandal, which had been rumoured even before the Series started with a sudden betting spike on the Sox's opponents, the Cincinnati Reds. Although the eight players were acquitted in court, the investigation resulted in life bans from the sport for all eight players involved. The delayed payment or non-payment of players is still a significant reason why players agree to fix matches in sports today.

College basketball has also experienced a number of match-fixing scandals, principally for point-shaving, which is the illegal act of purposefully holding down the



Andrea Shepard/PA Images

Former NBA referee Tim Donaghy (front) appears in a New York court in 2007 charged with feeding gamblers inside information

score of a sporting event in order to impact who will win bets against a point spread. It is a form of match-fixing similar to 'spot-fixing' or 'micro-manipulation'. Spot-fixing does not involve a team purposefully losing a game – rather it is actions taken to ensure certain events happen during the game, and is exclusively within the realm of betting-related match-fixing.

There is an argument that the ultimate responsibility for keeping sport clean from match-fixing lies with SGBs

In 1951, various schools, including City College, Manhattan College and the University of Kentucky, were implicated in point-shaving scandals, which led to the arrests of 32 players alleged to have assisted in the fixing of a total of 86 games, and suspensions from the National Collegiate Athletic Association (NCAA). The fixers themselves, Cornelius Kelleher and brothers Benjamin and Irving Schwartzberg, all bookmakers and convicted felons, were also booked on bribery and conspiracy charges. The most high-profile instance of betting fraud by a game official in recent US sports history was that carried out by former National Basketball Association (NBA) referee Tim Donaghy. This was investigated and made public by the Federal Bureau of Investigation's division specifically tasked with investigating gambling and fixing in sports. Donaghy was found to have bet on games in which he had officiated during the 2005/06 and 2006/07 NBA seasons. Donaghy pleaded guilty to two federal charges related to the investigation and was sentenced to 15 months' imprisonment, followed by three years of supervised release. This led to the NBA revising the behavioural guidelines for its referees, with it having been revealed that almost all admitted to having engaged in some form of gambling – such as betting on golf – despite a ban in their contracts.

A prominent bookmaker has suggested that referees had to be the prime suspects in this case because the players make too much money to risk losing their careers over match-fixing. I have heard this argument raised a number of times in the US. However, the Bountygate integrity scandal, in which some New Orleans Saints players intentionally broke the National Football League's rules for as little as $1,000 – when they were earning millions each season – challenges this view.

Canada has recently experienced problems with match-fixing. In September 2012, the Canadian Broadcasting Corporation (CBC) alleged that at least one game in the semi-professional Canadian Soccer League (CSL) had been compromised by the practice. This was discovered after CBC obtained the wire-tap evidence from the Bochum trial, the biggest match-fixing case ever to come to court, which centred on a Europe-based crime syndicate that made a reported $9.8 million profit from corrupting players, referees, coaches and federation officials. Many of those involved were given severe prison sentences by the German court. These revelations led the Canadian Soccer Association to sever its ties with the CSL.

The gravity of the threat

It often seems to me that US sport is as much about entertainment as it is about the eventual outcome, which is of course much of its attraction. Consequently the integrity of sport is conveniently put to the back of the minds of SGBs and fans alike. Take doping in baseball, for example, and the huge Balco scandal, which involved sprinters and baseball stars. If a contest is more intense and entertaining, why worry about integrity issues?

One response would be that the illegal gains from match-fixing represent up to $9.3 billion, which is six times more than the global trade in illegal small arms; another, that in South Korea in 2011 a soccer player was found dead in a hotel room accompanied by a suicide note referencing a match-fixing ring. Or one might point to the possibility that footballers are being trafficked from Africa to play in minor professional soccer leagues (perhaps in the US), told to match-fix and then abandoned. Ronald K Noble of Interpol points out: "Organised criminals frequently engage in loan-sharking and use intimidation and violence to collect debts, forcing their desperate, indebted victims into drug smuggling and their family members into prostitution." In the modern world of match-fixing, sport is not only dealing with vast sums of money and organised crime, but also related problems such as threats of violence, human trafficking and money laundering.

Taking all these issues into account, what steps should SGBs in the US take to ensure their sports are not beset by match-fixing and its associated evils?

US governing bodies' current approach

There is an argument that the ultimate responsibility for keeping sport clean from match-fixing lies with SGBs. In a report published for the UK Government in February 2010 by the Sports Betting Integrity Panel (SBIP), the Panel formulated a uniform code of conduct on integrity which it recommended should be implemented across all sports. As part of its report, the SBIP examined how 12 major SGBs dealt with the following seven threats:

1. Placing a bet.
2. Soliciting a bet.
3. Offering a bribe.
4. Receiving a bribe.
5. Misuse of privileged/inside information.
6. Failing to perform to one's merits.
7. Reporting obligations.

Worryingly, in 38 per cent of instances, the SGBs made no provision for at least one or more of the threats; indeed the IAAF (athletics) and Royal & Ancient/PGA (golf) made no provision in their rules for any of the seven.

The major US sports all have rules in place for direct participants – be they players, officials, coaches or similar – in relation to betting. In fact, the NCAA takes the hardest stance on this issue. However, I doubt that even it caters for all seven of the threats. Misuse of privileged/inside information is becoming an increasing problem in the match-fixing field, particularly with the advent of social media, as players can reveal information sensitive to betting, such as injuries on the roster and team selections.

Many deficiencies in the rules and policies of US SGBs could be remedied by developing closer relationships with legitimate betting operators, be this via specific anti-corruption units, early warning systems or memoranda of understanding. Major League Soccer (MLS) is to be applauded, as this body uses Sportradar's Fraud Detection System, which monitors betting data and patterns from across the world. MLS also bans mobile phones and other electronic devices from locker rooms at certain times to prevent players from communicating with match-fixers (see Scaife, p84). So why won't US SGBs in general engage with betting operators?

US attitudes to sports betting

A great deal has been written on sports betting in the US in the past 12 months, given the high profile litigation currently taking place between the State of New Jersey on one side and the NFL, NBA, National Hockey League, Major League Baseball, NCAA and the Department of Justice on the other. The case concerns the constitutionality of the Professional and Amateur Sports Protection Act (PASPA), which restricts all but a few states from legalising sports gambling. I will not be going into the details of the case, but it does highlight some important historical and political issues that can be seen to impact the fight against match-fixing in the US.

Sports betting has always been present, and indeed prevalent, in US society, despite restrictions. To give an indication of the scale of sports betting in the country, the National Gambling Impact Study Commission estimates that in 2008 $2.8 billion was wagered legally in Nevada, compared with $380 billion wagered illegally across the country. Historically, there has never been effective regulation by either state or federal government. This came to a head in 1992, when the professional and college sports convinced Congress to make PASPA law, making

betting on sports a federal offence in all but four states (a notable exception was Nevada, for Las Vegas). They convinced Congress to do this on the following grounds:

1. Stopping the spread of sports gambling.
2. Maintaining sport's integrity.
3. Reducing the promotion of sports gambling among America's youth.

However, the message PASPA really sends out is as follows: we know that sports betting is happening (and on a grand scale), but owing to the perception across the US that gambling is an evil in society, we will drive it further underground into the black market and ignore it! This reasoning is counter-intuitive at best, especially in the context of protecting the integrity of sport.

US SGBs are also accused of hypocrisy and the selective application of integrity where sports betting is concerned. In the 2012 NFL season, the referee lockout during the early weeks of the season, and the blatant errors made by the replacement referees, led to howls of derision that the replacements, and especially the League, had seriously compromised the game's integrity. Darren Heitner in *Forbes* magazine even went as far as to say that NFL Commissioner Roger Goodell's stance on sports betting "has become almost disingenuous [as a result]". When one looks at Great Britain, considered one of the most liberal jurisdictions for sports betting, but also one of the best regulated by the Gambling Commission (GC), the stance taken by US SGBs appears even more irrational. The GC was set up under the Gambling Act 2005 to regulate commercial gambling in England, Wales and, to a lesser extent, Scotland. It is an independent non-departmental public body sponsored by the Department for Culture, Media and Sport (no such equivalent department exists within the US government). Ever since its establishment, the GC's remit has covered sports betting and betting integrity issues. It also has an intelligence unit specifically for betting integrity.

Despite all this, what the GC – and other national regulators around the world – freely admit is that they only have jurisdiction for their own territories. They do talk to other regulators, share their experiences with them and provide intelligence to other countries when asked to do so, but they are not in a position to force other countries to take action where necessary. This is where the US, and other illegal gambling markets, must begin to engage and amend their regulatory frameworks. After all, match-fixing is a problem that can only be effectively tackled by concerted action on a global scale.

European political institutions have taken it upon themselves to lead a coordinated fight against match-fixing

European political institutions have taken it upon themselves to lead a coordinated and (hopefully) coherent fight against match-fixing. The European Union (EU) is approaching this in several ways. One is by working with the Council of Europe (COE) towards a possible international legal instrument against the manipulation of sports results, notably match-fixing. The latest draft of the Convention covers (among other things): betting monitoring systems; judicial cooperation; exchange of information; and uniform sanctions.

Convention against match-fixing

Once the Convention is finalised in 2014, the COE hopes to convince countries outside of Europe, including the US, to sign up. It is worth stressing at this point that the COE is an entirely separate and distinct body from the EU. It covers almost the entirety of Europe with its 47 member countries, while the EU has only 28 Member States. The role of the COE is to develop common and democratic principles based on the European Convention on Human Rights.

Another approach by the EU is via its review of online gambling within the Community. 'Safeguarding the integrity of sports and preventing match-fixing' is one of five priority areas in the *Towards a comprehensive European framework for online gambling* communication published by the European Commission (the executive arm of the EU) on 23 October 2012. Member States themselves are urged to take the following steps:

1. Set up national contact points that bring together all relevant actors within each Member State that are involved in preventing match-fixing.
2. Equip national legal and administrative systems with the tools, expertise and resources to combat match-fixing.
3. Consider sustainable ways to finance measures taken to safeguard sports integrity.

The European Commission has subsequently made an announcement that it will be adopting a Recommendation on the best practices in the prevention and combating of betting-related match-fixing in 2014.

The third step above is rarely given enough importance in the debate about match-fixing. It is laudable having grand plans for transnational policies and cooperation, but who is going to pay for them to be implemented? In the age of worldwide economic austerity, a major obstacle to progress in this area will be governments setting aside the necessary funds. Governments increasingly have to lead as SGBs themselves are often reticent to do so. The betting operators make up one set of stakeholders that has shown the means and will to spend on this issue, which in the US draws a sharp intake of breath. Policymakers need to have a more cordial attitude towards betting operators for them to continue, and even enhance, this investment.

Ralf Mutschke, FIFA's Director of Security, calls for governments to address match-fixing at a 2013 Interpol conference in Kuala Lumpur, Malaysia

Stanley Chou/Getty

The US should also look at a wholesale review of its legal framework for sports gambling (both online and offline) and match-fixing, as there is at this time a patchwork plethora of relevant federal legislation, as well as State statutes. This includes the: Wire Act; Travel Act; Racketeer Influenced and Corrupt Organizations Act; Illegal Gambling Business Act; Unlawful Internet Gambling Enforcement Act; Bribery in Sporting Contests Act; and PASPA

This creates great legal uncertainty and opportunities for unscrupulous individuals, including match-fixers and illegal operators, to fall through the cracks. FIFA's Director of Security Ralf Mutschke said at the recent jointly hosted Asian Football Confederation and Interpol conference on match-fixing in Kuala Lumpur, Malaysia: "We have to bring in the governments because they have to change legislation and laws, because a lot of countries do not have proper laws fighting match manipulation and corruption."

What action does the US need to take?

Research and understanding of match-fixing is still really in its infancy, particularly when compared with other threats to the integrity of sport, such as doping. Of the two forms, betting-related match-fixing should remain the primary focus in this field for all stakeholders in sport because transnational criminal organisations take advantage of changes and disparity in regulations, flaws in legal and judicial systems, the opening-up of borders and the growth of free trade. Governments and the world of sport, particularly in the US, are not as familiar as they should be with the risks to which they are exposed because they do not always fully understand betting and gambling. Increased awareness and transparency would be two significant benefits should the US, and other unlicensed jurisdictions, move from a model of outright prohibition to one in which sports betting is legalised, regulated and taxed. The licensed gambling industry contributes $4.5 billion to the EU sports sector alone, so the potential benefits to other jurisdictions are clear.

Some people will always look to make a quick buck from illegal sports betting. However, the size and growth of this black/grey market can be lessened if concerted action is taken. Indeed, national and global economies will provide the biggest challenge in finding the necessary resources that all actors need to tackle the problem effectively. In my opinion, this is undoubtedly the principal issue yet to be resolved or even properly addressed. Needless to say, resources from US, Chinese and Indian governments, for example, would go a long way in plugging the shortfall.

John Abbott, Chair of Interpol's Integrity in Sport unit, said at a conference in Brazil in November 2012 that the five key elements for a successful strategy against match-fixing are: partnerships, information exchange, coordination, prevention strategies and proactivity. Outright prohibition of betting achieves none of these.

Although sport is partly about entertainment, the thrill of physical competition is ultimately generated and maintained by upholding the integrity of sport. The unique emotions felt through sport, which are like no other in life, stem from sport's natural unpredictability, which is without doubt its most important commodity. Match-fixing in any form seeks to destroy this for unadulterated and selfish greed. This is why all countries and sports need to stand united and fight match-fixing together. ■

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Fighting manipulation

The International Centre for Sport Security (ICSS) and the Université Paris 1 Panthéon-Sorbonne will release a 700-page report on how to tackle match-fixing on 15 May. **Andy Brown** spoke to Professor Laurent Vidal, Chairman of the ICSS-Sorbonne Sport Integrity Program, who led the research project

The manipulation of sports results, including match-fixing, is consistently cited, alongside doping, as one of the biggest threats to the integrity of sport. Concerns have grown as new technologies have globalised gambling and organised crime groups appear to be targeting the market.

The internet has allowed professional sporting competitions such as the FA Premier League to become truly global in nature (it currently has broadcasting deals in 212 territories, giving it a potential cumulative audience of 4.7 billion). However, this global reach also means that sports betting is no longer confined to the country in which a professional league resides. At the same time, the internet has allowed both online and offline betting to become more sophisticated, as sports betting operators can learn from their peers how to offer more innovative and complicated bets.

At least part of the attraction of sport is the unpredictability of the result. It is feared that if the public perceive that the result of a sporting contest has been predetermined, then interest will wane. This is something that worries not only sportspeople, but also sponsors, television companies, gambling operators and others who depend on sport for their livelihood.

Whether the prevalence of match-fixing is actually growing or whether we are just getting better at detecting it remains a debatable point. However, last year, the amount of detection activity that took place was truly staggering. To cite but a few examples: European police organisation Europol reported that 680 football games were under investigation for potential match-fixing; a *News of the World* 'sting' operation lured three cricketers – Salman Butt, Mohammad Asif and Mohammad Amir – into agreeing to fix elements of games (they were subsequently banned by the International Cricket Council); Stephen Lee received a 12-year ban from World Snooker for fixing games; and Robert Hoyzer and Ante Sapina were tried in Germany for attempting to fix a number of football games.

Sport, gambling operators and governmental organisations agree that something needs to be done. However, agreeing a coordinated plan of action to tackle the problem has proved difficult, first because of the lack of scientific information about its scale, and second because of the number of different actors involved. The *Fighting Against the Manipulation of Sports Competitions* report aims to provide the first comprehensive analysis of the manipulation of sports competitions, lending scientific support to the Council of Europe's Enlarged Partial Agreement on Sport's (EPAS) Draft Convention Against the Manipulation of Sports Competitions. This Draft Convention aims to "prevent, deter, detect and combat" sports manipulation by promoting "national and international cooperation between the public authorities concerned, as well as with the relevant bodies or organisations particularly those representing the sports movement and betting operators".

Last year, the amount of detection activity that took place was staggering

Making sport healthier

The report was commissioned by the ICSS; however, it is independent and has been providing advice and information to EPAS, sports federations and non-governmental organisations with the aim of making sport healthier across Europe. EPAS has used some of the research carried out by the ICSS-Sorbonne Sport Integrity Program to draft its Convention.

"The ICSS came to us because France has a unique regulatory environment," says Professor Laurent Vidal, Chairman of the ICSS-Sorbonne Sport Integrity Program that produced the report. "The relationship between the state and the sports movement is very specific and we

Integrity

have very tough legislation against match-fixing, as does Australia. The ICSS wanted a multi-disciplinary study and wanted it to be independent. We have been very careful about our independence.

"I have been perfectly free in my research and the ICSS knows that this is a precondition to producing a quality report. Moreover, from the very beginning, the research programme was an international one; however, we didn't realise just how big it would get.

Professor Vidal adds: "During the EPAS Convention negotiations, Stanislas Frossard, EPAS Executive Secretary, visited us in Paris-Sorbonne and has made specific notes on specific topics. We are working closely with the Council of Europe and with UNESCO. The research programme is now very close to the sports ministers in the Member States. We are working with European Lotteries and other organisations, so the research programme has evolved and grown, but always recognising the need to be independent."

Finding the figures

Professor Vidal further explains the need for the research undertaken in the project. "When you look at the different meetings that have taken place between the various groups involved in this area – some of which are very professional – it always comes down to the same thing. 'It's global', 'it's complex', 'it's challenging', 'cooperation is needed', 'a mapping of the different legislation is needed', 'information sharing is needed', and so on. The majority of countries agree on what we need to do, but all of these statements are only announcements – they are not based on any scientific analysis.

"Firstly, nobody has very precise figures about the size of the market. There has been no serious study of this area on a scientific basis. Some say that they believe that the illegal market makes up 80 per cent of the global sports betting market, but they don't actually have the scientific analysis to back that up. The scale of the illegal industry is between $750 billion and $1 trillion.

"When you speak to the different stakeholders in this system, people think that anyone speaking about this subject has an agenda. They think that people are either acting for a state, a gambling operator, a sport or another organisation. People came to me because they wanted to have true figures and scientific data. That is very important," Professor Vidal continues.

"The second point is about the proposals and the solutions. We do need cooperation, we need to share information, we need to share data, we need to have a global map of legislation, we need to have an international convention, we perhaps need a specific definition of what constitutes illegal betting. However, once you begin to go into the details, it becomes much more complex.

"For example – what kind of information are you going to share? Depending on the country involved, you cannot share certain types of information. In terms of international law, if you say that we need an international convention, then what is the national legislation that gives you permission to share certain types of information? Can you collect information and collect data? Knowing all of this is very important. If you look at all of the involved countries, do we need a legal definition of illegal betting or not? What is the articulation and cooperation between disciplinary law and criminal law? It is very easy to outline, it is more complex to explain, and even more complex to state it in legal form."

> "Some believe the illegal market makes up 80 per cent of sports betting"

The report contains three main parts: the context and forms of manipulation of sports competitions; operating logics and the manipulation of sports competitions; and tools for fighting against the manipulation of sports competitions. "The first is the context: economically speaking, we needed to identify and explain the different betting markets, for example, what is a betting market, what are the figures involved and so on," explains Professor Vidal. "The second part involves the different actors – those placing stakes, the betting operators, and so on. The third part involves how to find the solutions. We think that with these three parts, we have a novel view of the phenomenon.

Professor Vidal adds: "At the end of each chapter, there are recommendations. These recommendations are then translated into legal rules that can be adopted. A summary of the recommendations will be tabled during the meeting on 15 May. On that date, we will present the report, a summary of the report and the recommendations. The summary will be distributed to the stakeholders in this area, but the recommendations have their basis in the full report.

"The next step is to propose guiding principles to the sport movement. It is not a disciplinary code or even models of best practice – it is much more than that. It is a mix between disciplinary, penal and criminal law. It contains guiding principles and we are going to start with that. We have invited a high-level small group to the 15 May meeting, and we will present guiding principles to both the sports movements and state governments."

Issues surrounding regulated operators

When looking at the issue of match-fixing, it is very easy to point the finger at the regulated gambling operators, who often defend themselves by saying that they have as much to lose from fixed sporting events as the sport itself. Regulated operators will generally shy away from accepting bets that could attract fraud, such as the first wide in a cricket over. They also generally limit the amount that can be staked and require payments to be made online (rather than using cash) in order to make all payments traceable, making money laundering harder.

Operators do this because they argue that fixed events skew their odds, affecting their profit margins. Many of the regulated operators have been instrumental in setting up memorandums of understanding with sport, allowing sport to identify and close down suspicious events that look as though they may have been fixed.

However, Vidal said that his research had identified that the European market still has issues. "Match-fixers can still place bets in European countries. It is not so

Left to right: Laurent Vidal, Professor of Public Law, Universite Paris 1 Panthéon-Sorbonne; Mohammed Hanzab, President, ICSS; Andre Hervier, the university's Vice President; and Sophie Dion, Director of Sports Law, after the signing the partnership agreement

ICSS

easy, therefore it is not as prevalent. For example, France has strong legislation, but even in France it is not easy to block and stop match-fixers from placing bets. Even if you look at the regulated European market, there is still an element within that which is illegal. So it is not true to say that we don't have a problem. We do have the Convention on Transnational Organized Crime, but there are also disciplinary solutions that can be used to solve the problem. There is betting-related match-fixing, but also match-fixing that is not directly related to betting."

Another controversial area examined by the report is conflicts of interest. Using the above-mentioned argument, gambling operators often put forward the view that there is nothing wrong with them sponsoring a sport on which they also take bets, or indeed owning a club or team that competes within their market. "Betting operators are always explaining that it doesn't benefit them to have a conflict of interest; however, the truth is more complex than that," explains Professor Vidal. "For example, some betting operators are sometimes aware that money laundering is taking place. A betting operator told me that he has some clients who are placing large bets every day. They believe that these people are laundering money, but they want to keep their client. They turn a blind eye."

> "We examine, theoretically, what would be the best form for an organisation to take in order to combat match-fixing"

Dirty money

Money laundering is a big problem, especially in the cash-based unregulated Asian offline markets, where payments cannot be traced easily. "The economic part of the report explains that using traditional methods of money laundering, it is accepted that you are going to lose 30 per cent to 40 per cent and keep 60 per cent," explains Professor Vidal. "If you look at Asian betting operators, the return for the player can be up to 80 per cent or even 90 per cent. The report covers money laundering in both the regulated and unregulated market. We have been working with people such as the Institut de Relations Internationales et Stratégiques (IRIS), which produces a comprehensive report on money laundering."

Conflict of interest may also arise in sponsorship deals: "The chapter to do with sponsorship deals with contracts and is legally orientated, while remaining practical. We have analysed specific provisions of a sponsorship contract to look at the provisions, and also to explain why they could form the basis of a conflict of interest. Do we need to prevent people from having shares in professional sports teams, and also from sponsoring sport?"

The report also maps the countries in which match-fixing is a criminal offence and those where it is not, as well as identifying the various police organisations that could be useful in coordinating an international approach to tackling match-fixing. "We have mapped all the criminal laws and the definitions that they use in the various countries," explains Professor Vidal. "We have assessed 35 countries in this way. This has been a job that my colleagues, who are specialists in international law, have carried out. We also examine how we can put the police in a position to carry out their job. It is great to have the involvement of Interpol; however, they can only exchange information, they cannot act against the perpetrators.

"When we started this research, EPAS was in the middle of negotiations for its own convention on match-fixing, and we thought that the EPAS Convention might come up with a solution to this problem. However, although the Convention is very useful, it is a kind of compromise. Perhaps we need to extend a Convention against corruption to cover match-fixing, or perhaps to add an addendum to the EPAS Convention.

"My colleagues in international law explored how to put policemen in a position to cooperate. The first step is to have a platform to share information – do we need an informal platform to share information, or do we need a more formal organisation? Everybody is telling us that they don't want another WADA [World Anti-Doping Agency]. We now have experience from the way in which WADA was set up and we are able to avoid making mistakes.

"We have also made some notes, especially for the EPAS about how to make it easier for police to cooperate. There is also a chapter on that in the report."

Professor Vidal believes that prevention and education are crucial if we are to solve the issue of match-fixing, precisely because prosecuting fixers takes such a long time and is so difficult – as illustrated by Germany's difficulties in prosecuting referee Robert Hoyzer and Ante Sapina, who were alleged to have colluded to fix a large number of football games. "We have a specific chapter on philosophy and ethics," says Professor Vidal. "In this chapter, we explain what it means to embrace and have an ethical perception of the stakes involved, also, how to try and make young people and athletes understand what is at stake. We also have a sociology chapter to explain the motivations of the people behind match-fixing. We want to see what is behind the mask.

"A part of the report is dedicated to institutional design assessment. We assessed all the existing organisations in order to look at their efficiency. We also examine, theoretically, what would be the best form for an organisation to take in order to combat match-fixing," adds Professor Vidal.

Supply and demand

As an economist, Professor Vidal is keen to highlight the economic section of the report, which deals with the supply and demand part of the market, and how it works.

Peter Dejong/PA Images

Rob Wainwright, Director, Europol, during a press conference on match-fixing in 2013. The ICSS-Sorbonne report identifies the organisations useful in coordinating an international approach to tackling match-fixing

"We have a practical chapter describing how match-fixing happens. We carry out a risk assessment in terms of how dangerous different types of bets are in creating conditions in which match-fixing can be carried out.

"It is very interesting to explain and look at the different formulas used to carry out these bets. Generally, the more complex the bet is, the more dangerous it is. I think that this is one of the most important parts of the report. This type of analysis really is quite new.

"It is also fascinating, to look at the history of how sport has approached this problem. I think that the report represents a new frontier in this approach, because it has been conducted on a scientific basis and if recommendations are made, they can be backed up with data rather than just slogans." ■

■ The *Fighting Against the Manipulation of Sports Competitions* report will be presented to governments, international organisations and the sporting industry on 15 May. For a full copy, please contact info@theicss.org.

Andy Brown is a journalist with over 10 years' experience in covering the business and regulation of sport. Brown has been Editor of *World Sports Law Report* since January 2007.

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Mapping the challenges

Keir Radnedge reviews the security and integrity issues that are facing Brazil, FIFA and global sport as the World Cup finals approach

What a difference four years makes. The spring of 2010, with World Cup hindsight, appears something akin to an era of innocence. Certainly there were security concerns overshadowing the imminent finals in South Africa, but nothing compared with the storm clouds that are now looming in Brazil.

Back then, the security focus – apart, of course, from the standard terrorism fears that face every international event – was on the safety of visiting supporters in the streets, squares and stadia precincts of the first African country to host world football's most wide-reaching extravaganza. A determined effort by the South African government to train up several thousand new, young police officers meant that – as police chief Andre Pruis acknowledged later – the 2010 World Cup was probably the most secure period in the country's modern history.

FIFA Secretary General Jérôme Valcke has declared "full confidence in the arrangements by Brazil. It is a reality that the question of security is always raised by the media. As it was in South Africa in 2010 and all went well. As in 2010 there will be an integrated security command centre. Everyone coming to Brazil will not need to worry in regards to safety."

But Brazil is a different ball-game, and no fewer than five security issues confront the government, the local organising committee and FIFA as the tournament draws closer.

These issues are:

- overall national security in the face of potential terrorist or other violent threats to venues, transport infrastructure or public spaces;
- keeping visiting fans and/or tourists safe on the streets;
- potential for renewed street protests and uncertainty about how powerful they will be;
- fears that certain matches – perhaps low-profile games – will be targeted by international match-fixing gangs; and
- Possible cyber attacks against official websites.

The issue of national security is the one that outsiders tend to take for granted. Keeping a country safe is the basic duty of its national security forces and intelligence services, and while major events present challenges, they should be capable of taking a World Cup or an Olympic Games in their stride. The Brazilians – as with every other impending host country – undertake observer tours of other events and consult on 'patterns' of protection.

Basic safety on the street was a specific concern in South Africa. Brazil is no different: a half-sensible visitor can work out which streets and alleyways to avoid late at night. Much of the security advice to visitors will stress the application of common sense. Brazilian officials are sensitive on this issue, however. When a United Nations observer queried a lack of safety on the streets of São Paulo, Foreign Affairs Minister Gilberto Carvalho replied by saying: "Violence exists anywhere, in any country. I've been mugged in France, in Italy. We cannot accept any suggestion that Brazil is an inhospitable country and offers any risk to tourists." His tetchy response did not assuage lingering concerns over whether sports tourists could be insulated, in their event bubble, from criminality – whether it be low-level violence on the street or an overflow from the favelas.

> More than 700 security agents of the federal police will be on duty in Rio

Gang culture

Brazilian cities vary in terms of safety. São Paulo and Rio de Janeiro, as two of the largest, are of particular concern. For example, Rio has been hit recently by an outbreak of 'arrastraos' or dragnets in which groups of teenagers stampede through the city's beaches, stealing whatever they can grab along the way.

Hilario Medeiros, the local organising committee's (LOC) head of security, says that 20,000 men have been trained up in event security and so: "Brazil is ready in terms of its various organisations and private security." Anderson Bichara, coordinator of major events for the Rio police force, has said that more than 700 security agents of the federal police will be on duty in the city, where FIFA will be based and whose Maracanã stadium will host seven matches, including the final on 13 July. This 700-strong

force includes agents assigned to the delegations of the competing teams and organisational delegations. Travel for the teams will be secured with ground escorts and helicopters containing armed officers, which will be coordinated from the main airport of Jacarepaguá.

The use of military police has unnerved some, as their ethos has been described as a hangover from the years of military dictatorship. Adding to this sentiment, last year eight military police officers were arrested over the execution-style murder of two youths in the Brás suburb of São Paulo. Also, Amnesty International has long fretted about the means by which the police have been regaining control of the favelas. This criticism increased after last year's forced eviction of several dozen indigenous squatters from the crumbling old Indian museum complex next to the Maracanã stadium. Only a week earlier the commander of one of the specific 'police pacification' [UPP] units in the northern zone of Rio was jailed for six years for accepting $15,000-a-week 'protection money' from a notorious drugs trafficker.

Social protests

Even the United Nations has expressed concern at the manner in which police met the street protests that erupted all over Brazil during the Confederations Cup last June. The government and FIFA were shocked at the outpouring of anger in the Brazilian population over a perceived imbalance between $14 billion spent on the World Cup and expenditure on social welfare, education, health and transport services.

Sports Minister Aldo Rebelo insisted that World Cup spending was minimal compared with the national welfare budget. He pointed to supporting infrastructure projects that would be a legacy for years to come. Unfortunately, many such projects have never even got off the ground. Residents of Manaus, the Amazon capital whose stadium threatens to be the most sparkling of white elephants, were pacified with promises of a monorail and upgraded bus service. Neither has yet seen the light of day.

Hence the anger, which was met by an erratic and panicky police response during the Confederations Cup. A French observer for the UN reported an "alleged excessive use of police force against protesters [with] tear gas and rubber bullets [whose] deployment was arbitrary and violent. As a result, many protesters and journalists were injured."

The report also complained that police had thrown tear gas at restaurants and other private property, adding: "It was reported that a large number of peaceful demonstrators were arrested. Some were arrested even before participating in the protests."

The UN also highlighted the treatment of journalists. This is timely, given the further arrests of journalists reporting on protests in São Paulo in February. The UN has questioned Brazil's commitments to international agreements on human rights and demanded "full details of the legal framework for the use of force during peaceful protests." It also sought "detailed information about the legal basis for the arrests and detentions of peaceful demonstrators."

Riot squad officers clash with protestors before the final of the FIFA Confederations Cup in Rio de Janeiro, Brazil

Tasso Marcelo/Getty Images

A special 10,000-strong riot force is being established for the World Cup in an effort to support police control. An intriguing sign of a revision of police tactics was the deployment at a recent São Paulo protest of 140 officers who were unarmed but trained in martial arts. They used the tactic known as 'kettling' to contain demonstrators.

Security was a priority issue at a two-day workshop in Florianopolis at which representatives of the competing countries were briefed in detail on how the finals will work. General Jamil Megid Junior, who is major events coordinator for the Defence Ministry, explained that his office was focused on the protection of strategic facilities, contingency and prevention plans as well as anti-terrorism measures. Each of the 12 cities would have its own regional command centre and all would liaise with the Ministry's permanent operations centre in Brasilia.

Similarly, Andrei Rodrigues, the general's opposite number at the Justice Ministry, promised full integration of command and control between government, the LOC and FIFA, the State Security Office (GSI) and the Brazilian Intelligence Agency (ABIN). The experience gained would serve as a security legacy for the entire country generated out of the hosting of the World Cup.

Matchday and team security was also the focus of a two-day conference involving all the concerned authorities and agencies. Organising directors explained their work in the following areas: evaluation of scenarios and risks, security at facilities, security operations, stadiums, accreditation, transport, protocol, national team training centres and official training grounds. Some of the fan fests venues have been altered with security concerns in mind.

Ralf Mutschke, FIFA Director of Security, has stated that "collaboration of government bodies and agencies is essential in achieving the highest security standards and this is what FIFA has achieved with the LOC and its various stakeholders... We saw some social unrest and vandalism at the FIFA Confederations Cup in 2013, but that does not mean to say that we are going to reduce our presence, hide ourselves away or keep our symbols under cover. We do not feel, in fact, that we are the main target of the demonstrators... Obviously the protests had something to do with the Confederations Cup and the fact that Brazil and the whole world was watching the competition. We don't feel that we are the targets, though. Far from it. We are proud to be here in Brazil." The problem, however, is the very association of government, sponsors and the event – a linkage that is inseparable operationally, but that makes the event and FIFA a target.

This is reflected in recent indications that street protest sympathisers may also indulge in cyber attacks on official websites and those of sponsors. Out in cyberspace, according to a report from *Reuters*, hackers are aiming to capitalise on an unprecedented global audience to 'show off' their ability to target sites operated by FIFA, the government, other organisers and corporate sponsors.

Other concerns

Brazil's telecommunications networks are already considered to be under immense pressure to meet demand, and a large amount of traffic is inevitable on matchdays, particularly when the home team is playing. *Reuters* claimed the country is also considered to be "home to one of the world's most sophisticated cyber-criminal communities, which is already disrupting ticket sales and other World Cup commerce."

There are also concerns about the scale of the Brazilian World Cup, and the sheer distances between host cities. FIFA may have been over-optimistic in ceding to Brazilian pressure to use as many as 12 venues all over a vast country and to scrap the 'group clusters' system, which would have eased stresses on security, transport and accommodation services. Hopefully those lessons will be heeded for future World Cups.

But Brazil 2014 is what it is, and FIFA must deal with reality. One step in favour of credibility has been the introduction of goal-line technology to rule out any repeat of the events at Bloemfontein in 2010. Then England's Frank Lampard had a goal against Germany refused by the referee even though the spectators in the stadium had seen his shot cross the line after it ricocheted down from the crossbar.

If only this were FIFA's greatest challenge. Sadly, it is not. The four years since the 2010 World Cup have seen the game begin to come to terms with a full-scale assault by match-fixing networks. The facility of internet technology allied to web-based betting facilities has opened up vast swathes of criminal potential. Almost every week another betting-led scam is uncovered from which no country's football is immune.

Charges have been laid against players and officials from central America to Shanghai, from Austria to England. No competition has proved immune: from CONCACAF Gold Cup to UEFA Champions League and right on down to lower division matches in central Europe and part-time football in the United Kingdom. On that basis, it would be naïve to believe that matches at the World Cup finals can be ring-fenced. The outcomes of matches between the giants of the game may be secure, but players who do not share the millionaires' lifestyle of a Ronaldo, Rooney or Messi are vulnerable to an approach to 'offer' a corner here, a throw-in there, a yellow card or an own goal.

Preventing match-fixing

Mutschke knows he and his staff need eyes in the back of their head as well as the support of education officers within the team delegations and a confidential hotline. He says: "Everything that happens in the football [must be] above board. FIFA has adopted a policy of zero-tolerance to match-fixing and has entered into partnerships with a number of organisations such as Interpol with a view to educating people and preventing match-fixing, including at the FIFA World Cup."

Easier said than done. Allegations have emerged that before the 2010 World Cup, match-fixing was rife in host nation South Africa's warm-up matches, under the nose of the football world on the eve of the tournament. Suspicions even extended into the finals themselves.

The facility of internet technology allied to web-based betting facilities has opened up swathes of criminal potential

Canadian investigative journalist and documentary maker Declan Hill also raised suspicions concerning incidents during three matches at the 2006 World Cup in Germany, including Brazil's 3-0 win over Ghana. The Ghanaian goalkeeper, Abukari Damba, later denied allegations that he had acted as middleman between the players and a gambling syndicate.

Concern over the credibility of the World Cup needs no explanation. In an age when many Olympic Games disciplines have been smeared by dope cheats, the world football federation knows it is buttressing a credibility dam on behalf of all international sport. In June and July the stakes, for Brazil, FIFA and world sport, will be higher than ever before. ■

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Integrity

Science Photo Library/Getty Images

Biological passports advance with new steroidal module

Athlete biological passport use is spreading rapidly and advancing technically. **Chris Aaron** reviews some recent advances and the direction of future developments

FIFA's chief medical officer, Jirí Dvorák, has announced that surprise drug tests will be carried out on all teams and players between March and the start of the World Cup finals in June. The tests will contribute to the system of Athlete Biological Passport (ABP) use, enabling FIFA to determine possible irregularities in blood and urine samples during the Finals.

"We will test all teams and all players between the first of March and the kick off, unannounced, at least once," Dvorak said. "From now on every player competing in the FIFA World Cup Brazil could be tested at least once, at any time, in any part of the world."

Brazil 2014 will be the first finals in which FIFA has used biological passports to detect doping, although it trialled the system during the recent Club World Cups and the Confederations Cup in 2013.

The samples from the World Cup finals will have to be flown to a laboratory in Switzerland because the Brazilian laboratory expected to be used during the tournament lost its accreditation from World Anti-Doping Agency (WADA).

The International Cycling Union (UCI) is also planning to strengthen its anti-doping measures with surprise testing, after an independent audit identified nine areas for improvement. Carried out by the Institute of National Anti-Doping Organisations (iNADO), the audit recommended several improvements, including:

- advance-notice testing should be eliminated;
- UCI and Cycling Anti-Doping Foundation (CADF) rules and procedures should be aligned to the new World Anti-Doping Code;
- CADF's authority in the carrying out of doping controls should be independent of the UCI;
- the system of referring doping violations to national federations should be reviewed; and
- a Therapeutic Use Exemption Committee should be established.

iNADO also recommended improvements in risk assessment, the auditing of sample collectors, and communications between CADF and the Legal Anti-Doping Service (LADS). Brian Cookson, the new UCI President, said: "The UCI will now make the necessary changes to policies, structures and procedures... I was pleased that the audit found that the biological passport programme is outstanding and that results management is excellent."

There were a small number of doping cases detected at the Sochi Winter Olympics, but the system of controls worked well, according to International Olympic Committee (IOC) President, Thomas Bach. More than 2,631 athlete samples were analysed for doping – nearly 200 more than planned, said Bach: "The number of the cases for me is not really relevant... what is important is that we see the system works. When you look at the substances taken, most of them stimulants, which have been detected, then look at the quantities, you see how far advanced the analysis is." The IOC stores Olympic doping samples for retesting as new methods become available. The storage period grows from eight to 10 years under revisions to the World Anti-Doping Code that take effect in 2015. In December 2013 the IOC also announced it had created a $10 million fund for research and testing of new doping detection methods, and allocated a similar sum to programmes to support and protect athletes against temptations or influence to take prohibited substances.

Technical and legal issues

The developments described above reflect the gradual adoption by many sports codes of athlete biological passports, along with surprise testing, in order to make doping more difficult.

An athlete biological passport (ABP) is an electronic record for professional athletes that collates records of tests and individual physiological performance markers over time. Doping violations can be detected from significant variations in an athlete's established levels. Eventually, ABPs should include blood, steroid and endocrine modules to help detect different types of doping, but at present only the blood module has been in widespread use, with the steroid module having been launched in January 2014.

The fundamental advantage of the ABP is its generality – it obviates the need for specific tests for particular substances

The fundamental advantage of the ABP is its generality – it obviates the need for specific tests for particular substances, an expensive and lengthy process. For example, the blood module is already sensitive to any new form of recombinant erythropoietin (EPO), or to any form of gene doping that might enhance oxygen transfer.

In early 2013, the Association of Summer Olympic International Federations published a report on their members' experience with implementing the ABP.[1] These were all generally positive, viewing the passport as a 'smarter' way of testing for doping that had been welcomed by their athletes, and could be used as a positive affirmation of being a 'clean' competitor – therefore becoming a potential tool in young athletes' anti-doping education programmes.

Some drawbacks were highlighted, such as the logistical and technical issues involved in gathering and transporting samples to qualified laboratories, and the scarcity of such labs around the world. The lengthy process of assessing a doping violation, from the time of testing to a final decision involving a panel of experts, was viewed as a disadvantage, as was the amount of training and preparation required to set up an ABP system and make judgements. ABPs were also viewed as an expensive means of dealing with individual cases. These points indicate the future direction for ABPs in terms of reducing the time and costs in setting up and operating a regime – for instance by collecting samples from all athletes at major events, and by investing in new testing technologies and laboratories.

In an article published by *LawInSport* in February 2013,[2] Emma Mason examined the use of ABPs in testing for EPO. As all test data is stored in the ABP, Mason noted the increased importance of standardised testing across laboratories, especially given the global nature of modern sporting competition.

One perennial question is where the money for testing and new research will come from. iNADO hoped to get about a third of its funding from industry sponsors but has been disappointed. A stable funding regime for anti-doping organisations will be important in rolling out ABPs further.

The importance of understanding the science underlying the physiological markers, and having a thorough assessment process, was highlighted in March, when Team Sky withdrew cyclist Sergio Henao from racing. Team Principal, Sir Dave Brailsford, commented on the Team Sky website: "in our latest monthly review, our experts had questions about Sergio's out-of-competition control tests at altitude – tests introduced this winter by the anti-doping authorities. We need to understand these readings better. We contacted the relevant authorities – the UCI and CADF – pointed to these readings and asked whether they could give us any insights. We've also taken Sergio out of our race programme whilst we get a better understanding of these profiles and his physiology."

Brailsford continued: "Sergio was raised in the mountains, goes back in winter and lives and trains at different levels. We've looked as far as we can at the effects of this, but our own understanding is limited by a lack of scientific research into 'altitude natives' such as Sergio. We are commissioning independent scientific research to better understand the effects of prolonged periods at altitude after returning from sea level, specifically on altitude natives.

"The independent experts are looking to use WADA-accredited laboratories and Team Sky will make the data and findings available to WADA, the UCI and CADF. Sergio will help with this programme and we expect him to be out of the race schedule for at least eight weeks." ■

Rafael Nederkorn/Getty Images

FIFA's chief medical officer, Jirí Dvorák, at a 2014 World Cup press conference explaining that new surprise doping tests will be conducted on all players before the tournament

Steroidal ABP module

The launch of the Steroidal Module for the Athlete Biological Passport was announced at the World Conference on Doping in Sport, held in Johannesburg in late 2013. It came into effect on 1 January 2014, and will be used by FIFA at the World Cup in Brazil later this year.

The Steroidal Module follows the same fundamental processes as the ABP Haematological (blood) Module that was introduced in 2009. It provides a standardised and largely automated approach to the detection of steroid abuse by longitudinal profiling and application of an adaptive model within WADA's Anti-Doping Administration and Management System (ADAMS).

The new module aims to identify athletes for further target testing, a more intelligent application of Isotope Ratio Mass Spectrometry confirmation, and assist in the direct prosecution of anti-doping rule violations.

The Steroidal Module has been incorporated into the updated ABP Operating Guidelines and related Technical Documents that are available on WADA's website. Together these documents provide guidance to Anti-Doping Organisations in the operation and management of the new module.

Themba Hadebe/PA Images

WADA president, Sir Craig Reedie, and vice president, Makhenkesi Stofile, at a press conference announcing the new Steroidal Module of the ABP in 2013

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1 *The Athlete Biological Passport: Is the Athlete Biological Passport an Effective Tool in the Fight Against Doping?* (ASOIF, 2013)

2 *The Athlete Biological Passport: a 'magic bullet' for EPO detection?* (Law in Sport, 2013)

Mobile payment security for stadium operations

Tracey Caldwell reports on the security challenges involved in the introduction of mobile payment systems at sports venues

The stadium experience at football clubs in the UK is often characterised by long queues at catering kiosks. At sporting events, during half-time or another break in the game, fans are often forced to decide whether to visit the catering outlets or the toilet, such is the queuing problem.

This could all change in 2014, as mobile payments are set to become mainstream. Stadium managers and their retail and catering partners are looking with interest at the latest mobile ordering and payment solutions, which can speed up payment, resulting in a higher take, and can spread purchases throughout the period of the event – if, for example, food is ordered and delivered to fans' seats. At the same time they are having to think hard about how to ensure mobile payments are secure and can be trusted.

Mobile payments may involve use of an existing e-wallet via, for example, Google or PayPal; or a mobile payment app that could be prepaid or linked to merchant systems. Some apps make use of QR (quick response) codes. Then there are NFC (near field communication) payments, in which a mobile device is used to 'wave and pay', similarly to how a contactless card is used. Some stadia are linking mobile payments with measures to address ticket counterfeiting, providing mobile device-based e-tickets.

Security concerns around mobile payments are valid in an emerging sector. In January, analyst firm Ovum predicted increasing complexity within the mobile payments ecosystem in 2014, and ongoing challenges around the business model for digital wallet services. Mobile payments providers are happy to explain how secure their solutions are, but a perception of risk remains that Ovum believes will propel consumers towards services associated with traditional banking institutions. Ovum's Consumer Insights Survey (see Figure 1 overleaf) found that 43 per cent of respondents chose banks as their most trusted mobile payments service provider, followed by credit card companies (13 per cent), online payment providers (nine per cent) and mobile operators (six per cent).

According to Ovum, 2014 will not be the year that NFC takes off for mobile payments, and neither will 2015. A growing number of alternative enabling technologies are readily available, and at lower cost to merchants and

Background: FabianCode/iStock Images

consumers, including Bluetooth low energy (BLE). The company also predicts a sharp rise in tablet-based mobile commerce and points out that Apple has been developing a fully fledged, unified mobile payments platform that will finally launch this year.

The challenge of Wi-Fi security

David Stupples, Professor of Systems and Cryptography at City University, London, explains that while systems associated with payment processing are mature and very secure, there may be an issue with Wi-Fi security that would put mobile payment security firmly on the agenda of stadia IT management.

"The majority of the payment systems have secure crypto and I am reasonably happy with the crypto itself," he says. "But if I have an open Wi-Fi, I can certainly get malware on to the systems that monitor my passwords through keylogging [recording the keys pressed on a keyboard]. That is the worry I have and I think, if stadia are going to go for a payment system working on an open Wi-Fi, there needs to be special attention paid to making this secure. Once you have logged on it is perfectly secure, but I could walk past somebody's mobile phone and if they have Bluetooth on I can infect them with keylogging malware [regardless of the Wi-Fi security]."

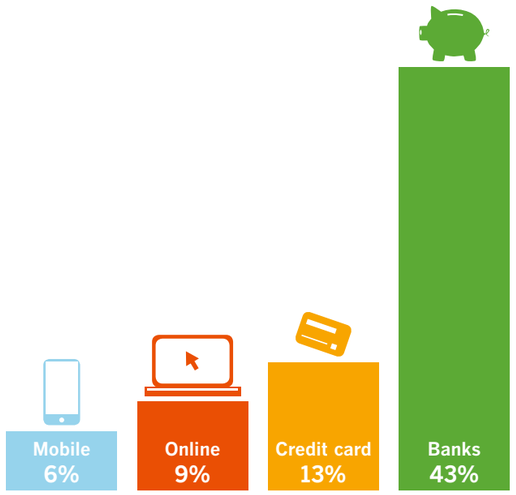
Kevin Baughan played an important role in enabling Wi-Fi at London Underground stations in preparation for the 2012 Olympics, as a director of Virgin Media at that time. He points out that stadia and Tube stations share issues relating to large-scale Wi-Fi provision.

"At a big public venue, if your goal is to reach out and connect to as many people as possible over an open public network, there is a very limited number of specific security connections you can make, as they are just too complicated to make available to every phone," he says. "If you want everyone to be able to connect quickly, then you have to be completely open."

Baughan also highlights two main considerations in enabling mobile payment security. First, he asks, does the user know who they are connecting to? If not, there is the risk of a man-in-the-middle attack (in which information between two users is intercepted and potentially altered) and the user may end up at a rogue website. Second, the network needs to be confident of the user's identity, so that authentication goes both ways. Mobile network operators are getting involved in securing authentication across Wi-Fi, but this remains a complicated area with lots of standards, according to Baughan. "There are a number of solutions that can encrypt communications," he says. "The Wi-Fi Hotspot 2 set of standards allows two-way authentication, and a stadium could switch between mobile service providers to get their permission to authenticate communications – but this can be a challenge. The easiest way for mobile operators to authenticate users is via each phone's SIM card, but the Wi-Fi has to connect with each individual mobile service provider for authentication."

There are plans to build an overlay of security into the cellular network for access over Wi-Fi, but this is not imminent. "In the meantime, a perfectly good interim solution usually ends up with https [the encrypted http standard] and the padlock sign displayed on the URL bar to authorise the site being visited," says Baughan. "When you are connected to a site displaying those security features, at the time they are displayed, traffic is encrypted, so if you are making a payment to that site, data is encrypted. Public Wi-Fi does create an exposure [to keylogging] and https can be 99 per cent of the solution."

Figure 1: Ovum Consumer Insights Survey, 'most trusted' payments service providers



Some stadia are forging ahead with mobile payments in different incarnations. In April 2013, English club Portsmouth FC was rescued by fans, who bought it from the administrators. Now the club is focusing on improving the match-day experience for visitors to its Fratton Park stadium in order to increase revenue.

John Kimbell, who runs digital media agency Navigate, is a Portsmouth fan and sits on the board of the supporters' club. He says: "We had traditionally awful, typical football stadium kiosks: expensive bad food, bad service, long queues. We identified that as an issue early on and brought all the catering in house. We wanted to build on the revamped kiosk service to deliver food to seats and make the experience of going to the ground a lot better."

Fratton Park has a capacity of 20,000 people and the club is testing QikServe, a mobile ordering and payment app, at the Fratton End. It is the biggest stand, holding

The QikServe mobile payment and ordering app is being tested at Portsmouth FC's Fratton Park ground

Pete Norton/Getty Images

5,000 people and each seat has a unique QR code. A fan can download the QikServe app on to a smartphone, then scan their code. The system knows which seat the fan is in and will bring up a menu of what is available to purchase that day. The items are then delivered to the fan's seat.

"People do have security concerns, but at the end of the day the QikServe system is robust," says Kimbell. "The payment system we are using is PayPal, so we are using good, strong brands with heritage in what they do. Of course there are always risks, but our job is to try to minimise them as much as possible."

The cost to the club has been covered, as it was able to find a local leisure firm to sponsor the service. There are currently no Wi-Fi security issues as fans use their 3G mobile connections for access to the app.

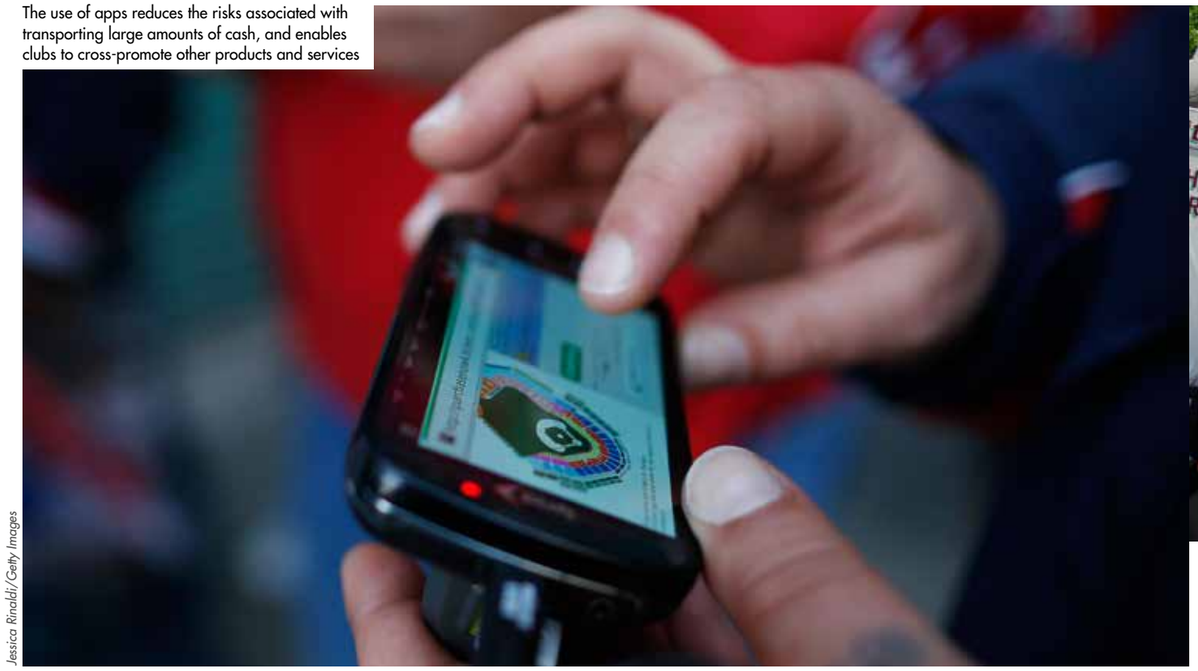
"This system would work a lot better on a Wi-Fi network, as 3G generally collapses at about 2.55pm when everyone is in the ground," adds Kimbell. "We are looking at every option [for Wi-Fi] and over the past six months we have been talking to every supplier out there, from big companies such as Cisco to the local supplier."

Meanwhile, Newcastle United FC is using the VenueMenu app, which enables supporters to order and pay for food and drink directly from their smartphones for delivery to their seats at half-time. Jamie Nelson, CEO at VenueMenu, says: "The reality for us is that our ultimate clients are the caterers. We currently work with Sodexo, which is a very large caterer in the UK and globally. We have launched at Newcastle United's football stadium at St James' Park, which has a capacity of 52,000 people,

VenueMenu enables fans to order and pay for food and drink from smartphones for delivery to their seats at half-time

with the expectation that we would continue to roll out to additional stadiums with Sodexo." VenueMenu also has large stadia-catering clients in North America.

VenueMenu looks to ensure security through its choice of app developer and payment processor. "The developers who built the app also designed and built



The use of apps reduces the risks associated with transporting large amounts of cash, and enables clubs to cross-promote other products and services

Jessica Rinaldi/Getty Images

the apps for a large number of the large Canadian banks and other financial institutions," says Nelson. "It was precisely their history of ultra-secure app development that had us select them. No credit card details are stored by VenueMenu, but rather by Stripe [a payment-processing firm]. This allows VenueMenu's process to be quick, fully secure and PCI [payment card industry]-compliant. Stripe is certified to PCI Service Provider Level 1, the most stringent level of certification available.

"All credit card numbers are encrypted. At their end, to avoid being a hacking target, Stripe's infrastructure for storing, decrypting and transmitting card numbers runs in separate hosting infrastructure, and does not share any credentials with Stripe's primary services."

Not just a technology challenge

More prosaically, he points out that there is a business case for comparing mobile payment security with the traditional alternative, as the latter facilitates a higher level of cash payments. Caterers actually lose a large amount of money per annum from cash 'leakage' and there are risks associated with transporting large amounts of cash at the end of an event.

Introducing mobile payments is not just a technology challenge, and needs a strong supporting infrastructure to fulfil orders securely and maintain safety and security within a stadium. "What is conceived to be a very simple app to order food that comes to you is a real logistics effort – this is not just an IT solution," says Nelson.

West Bromwich Albion FC in the UK has also gone down the app route, in February 2014 implementing Q App for pre-match and half-time ordering at its ground, The Hawthorns. Fans can use their mobile devices to order and pay, then catering staff use the app on tablet devices to fulfil the order. Q App manages the app platform, while The Hawthorns provides the Wi-Fi access.

Serge Taborin, Q App CEO, says that the app allows clubs to cross-promote their other products or services, such as merchandise or tickets for the next game. "Broadly speaking, mobile payments security is on par with online payments security, which most of us have been happy with for years," he adds. "To my mind, a bigger issue has been that of usability – making it easy for the customer to pay for something using their smartphone."

This is not to say that security issues did not loom large during the development phase. "When we started this project, we spent some serious time looking at potential security issues," continues Taborin. "The obvious ones revolve around credit card and payment processing security. To ensure our users' details are always secure, Q App never stores any credit card details on the user's phone. Instead, we have integrated with a market-leading third-party payments processor, SagePay, who handle all card storage and payments processing." Acknowledging that Wi-Fi provision is an issue, he explains that 4G networks are being rolled out in many areas, addressing many of the issues that might arise with Wi-Fi.

SnagMobile has implemented its mobile ordering and payment app in two stadia in the US and will expand into Europe soon, implementing in PostFinance-Arena ice hockey stadium in Bern, Switzerland. The concession also uses SnagMobile point-of-sale software to receive

UK football fans are familiar with having to choose between food stalls and toilet facilities at half-time

Paul Thomas/Getty Images

and complete the orders, as well as change prices, menu item details and view statistics about the operation.

Dianna Blanchard, food and beverage director of New York baseball team Tri-City ValleyCats, which uses SnagMobile, says: "In our industry it is important to stay on top of the latest trends. As social media and mobile technology become a larger part of the fan experience, it is important for us to incorporate them into our food and beverage operation. We want to give fans the more convenient option of ordering from their seat.

"Many of our fans simply like the idea of being able to order from their smartphone," she adds. "We have found that many Snag users place larger orders than our regular customers. Our sales have increased because fans are more inclined to order more when they don't have to worry about bringing items back to their seat."

Cash still an option

Dan Cody, SnagMobile COO, says the company has tried to mitigate security concerns by providing features along the way to stop hacking and unwanted orders. It uses PayPal's API (application programming interface) and customers can lock the app with a passcode to prevent misuse. It also offers a cash payment option to allay fears.

"We've never had an issue with taking payments though," says Cody. "Interestingly enough, we've found that around 70 per cent of all of our orders are placed for cash payment. This is a great option for the customer who might be hesitant to put their credit card information into an app, even if they are using a credible merchant like PayPal."

Mobile payments may achieve more traction when linked to mobile ticketing. MPayMe's ZNAP app offers QR-based ordering and payment and is also working with clients to implement ticketing features on the platform. Fans use ZNAP on their mobile to scan a QR code at the entrance instead of presenting a ticket for entry. They are validated to the stadium via a secure server in the cloud. The advantage is that tickets cannot be forged or resold.

David Pipe, Chief Marketing Officer for ZNAP, says it should be noted that there are security benefits to be gained from transmitting and receiving data through QR codes: "The system is based on transacting using very small data payloads. Given that our QR codes are simply pointers to a secure server in the cloud, ZNAP can complete most transactions with a data exchange of between 1.5 to 2Kb. So you don't need Wi-Fi to access and use ZNAP. All that's needed is a connection to a mobile network – even a low-data 2G signal is fine."

> It should be noted that there are security benefits to be gained from transmitting and receiving data through QR codes

The security challenges posed by mobile payments are real, says Stupples at City University. "Stadia need to consider how they are going to address the fact that it is easy to infect mobile devices with malware certainly through an open Wi-Fi and also through Bluetooth. I would like to see the security model as to how they are going to ensure people are safe." There is no doubt that stadium managers will be reviewing that model with care. ■

Tracey Caldwell is a business technology journalist who writes regularly about security issues in communications.

Advancements in stadium communications

David Geer assesses the impact of new communications technology at the FirstEnergy stadium in Ohio, home to the Cleveland Browns NFL team

Until 2013, fans wanting to use their mobile phones at the Cleveland Browns' stadium in Ohio had to rely on an AT&T distributed antenna system (DAS) tower inside the arena. In time for the 2013 National Football League (NFL) season, the club added a modern Verizon Wireless DAS tower and upgraded the existing AT&T tower.

According to club announcements, these upgrades should enable complete coverage for phones and partial coverage for devices such as laptops and tablets, depending on their communication features. This is a boost for social media use within the stadium, plus fans can now track other NFL fixtures during Browns games. The club also wants fans to report inappropriate behaviour in the crowd by texting their seat and section number. With the previously limited coverage, reception even for texting was not always assured. Now, making calls, sending texts and going online should not be an issue. However, fans must be using either AT&T or Verizon Wireless as their provider in order to benefit from either of the towers.

Those who do benefit are also able to receive public safety messages during games. When, for instance, a fan decides to use a smartphone app in the stadium, they will be making a connection to one of the DAS towers, effectively telling the stadium that they exist. The fan can then be contacted as and when is necessary.

"If the stadium needs to share with fans that they should exit through Gate B, for example, due to some emergency, the stadium can broadcast that to those phones automatically," says Patrick T Ryan, a senior instructor at the David B Falk College of Sport and Human Dynamics at Syracuse University, New York.

The DAS towers also extend each respective service provider's information security from the provider to the mobile phones and devices in the stadium. This security is identical to the protection that a consumer would receive when answering a call on the corner of a street. In fact, whether a fan is connecting through DAS (or Wi-Fi at a stadium equipped with Wi-Fi), the wireless security is the same as with any corporate security substructure, according to Ryan. "Typically in the DAS environment, you have telephone company-controlled encryption," he says.

Both AT&T and Verizon Wireless offer additional phone encryption services. Fans should ask their providers about free or paid encryption services for data and for voice calls. Those who are looking for additional in-stadium phone security should search their app stores for anti-virus, anti-malware, software firewalls and behaviour-based detection apps from the same vendors they trust in order to secure their computers and tablet devices.

Future upgrades

The improved DAS coverage in 2013 was not the end of the FirstEnergy Stadium's technology upgrades. According to the Browns organisation, their mission is to ensure that fans have state-of-the-art stadium communications technology and consistent, reliable means to stay digitally connected throughout games.

The improved home-viewing experience – high-def TV, watching multiple games at once, real-time fantasy-football updates and interaction via social media – has left some NFL stadiums playing catch up. It's one of the reasons why, before rebounding last year, the NFL

Data security

Any web servers under the Browns' control should establish connections to fans' devices or to other sites using Transport Layer Security (TLS), providing the other devices and services support it. TLS is an upgrade from Secure Sockets Layer. In fact, they should be using the most recent version, which is 1.2, as earlier versions are more easily hacked into. TLS 1.3 is still in development by the Internet Engineering Task Force (IETF), but will provide greatly enhanced security for data in transit.

Some visitors to Cleveland Browns games can now benefit from enhanced mobile-phone reception inside the stadium

Tony Dejak/PA Images

Predictor app: the Bluetooth alternative

The Predictor iPhone app, for use inside sports stadia, explores alternative means of networking within dense crowded areas, such as at a soccer match. It enables fans to share match-score predictions during games using an ad hoc Bluetooth network. Users can also chat about the game and share still photos in real-time, and the app will keep a record of scores and predictions.

Two fans can connect within the normal Bluetooth range of up to 10 metres. In tests, a user can pair with seven other phones, and indirectly with other fans, forming an ad hoc network that eventually fills the entire stadium.

Dr Matthew Chalmers and his colleagues at the University of Glasgow developed the app for research purposes, and made it available to fans during football tournaments. While Predictor does not enable betting, Dr Chalmers initially offered prizes of a few hundred pounds to fans who performed the best when competing.

Data security

The data security challenges with an app such as Predictor are not all that daunting, according to Chalmers. "There's a reasonably reliable protocol for communication between the phones and the server," he says, referring to TLS (Transport Layer Security), which secures the connection. There are also methods for keeping data encrypted at rest, such as the 256-bit AES (Advanced Encryption Standard) algorithm.

There is the matter of securing the Bluetooth mechanism used by the app, but, according to Dr Chalmers, at this stage the risks are few because the connections are very brief and the app cannot accept credit cards. Users also have to register and agree to the game's terms, including no liability for the app makers or the University of Glasgow. So additional security is not necessary, nor is it cost-feasible for a free research app.

If Predictor is to develop further commercially, there would need to be greater security analysis of the app. And there will be security issues if the app enables gambling by taking credit-card numbers. But there are fairly well established industrial and commercial practices for handling security for that, according to Dr Chalmers. These include practices that meet the PCI DSS (Payment Card Industry Data Security Standard) for point-of-sale security, for example.

Users will also have to be careful about who they connect with, especially over Bluetooth. Any security technologies would need to stop a man-in-the-middle attack: that is, when a hacker intercepts Bluetooth communications between two people and sends errant information back to each party. At the same time, users should ensure that they know who they are connecting to for game-play.

If the app were to be used for gambling, any financial transactions would need to process through an established network on an established company's servers, and then confirm to each of those gambling together, Dr Chalmers comments. If somebody develops Predictor into a commercial app,then there is reasonably good existing off-the-shelf technology such as encryption to address security issues.

"It's the same kind of thing you see with banks and online shopping," he adds. "The same kind of technologies that are already in everyday use will apply. The infrastructure for that is reasonably solid. I'm not saying it's perfect. I'm sure they're going to occasionally get hacked."

App variations

The latest version of the Predictor app is Euro Predictor. "We used it in the European Championship," says Dr Chalmers. There were 20,000 users during that tournament and a total of 40,000 when adding use of the app during the World Cup. This version gave users the chance to track and predict the scores, and improve their predictions by comparing with those of their friends.

"There is an element where you could use Bluetooth to link to another phone locally and play against someone in close proximity, one-on-one," Dr Chalmers continues. "Now we're thinking about getting Predictor ready to tie in with the professional leagues in Scotland and in a few other countries."

His research helped to develop a design process for this type of app so that he could try different versions of the app or tailor versions to different user-base populations. Variations on the app could track continuous activity and include more social interaction between users. Different user-base populations might include different levels of sociality/individualism and people from different countries/leagues in Europe.

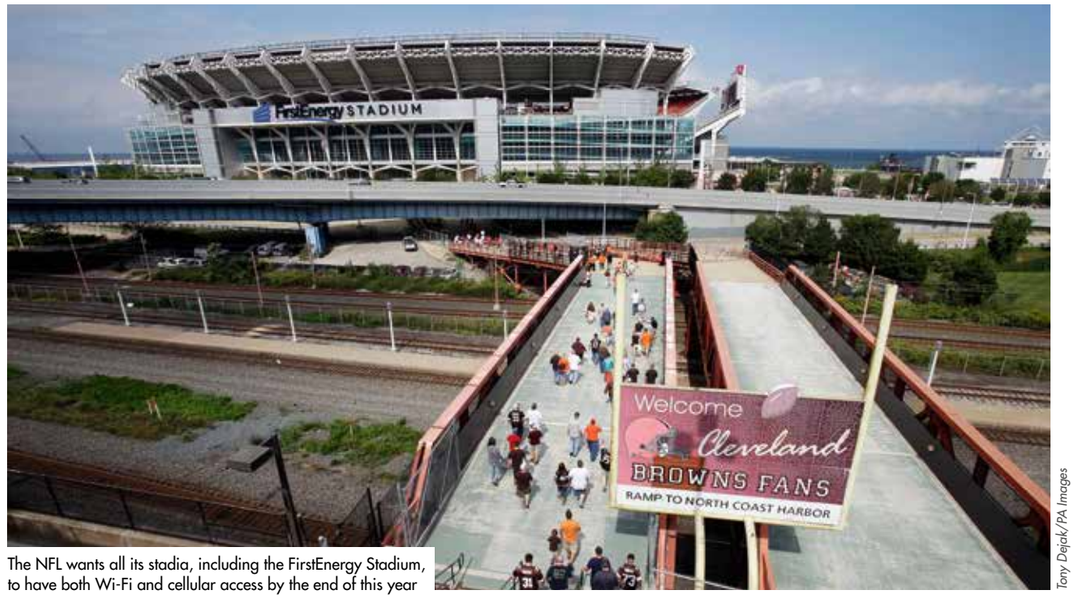
Dr Chalmers is working on app tools that encourage people to do more exercise

Health and fitness

There is also a connection between the research and health-and-fitness apps. "We are involved in a big European project called Eurofit, involving professional football clubs in England, Norway, the Netherlands and Portugal, and developing health-and-fitness apps for football fans tied in with medically driven health programmes inside the stadia," says Dr Chalmers, who is working on tools for the app that encourage people who are not avid fitness fans to do more exercise through peer support among fans, and a sense of affiliation with a club.

"They are fans of the football clubs but they're not tremendously healthy or fit themselves," says Dr Chalmers. The app could try to use their affiliation with a club and peers who are sports fans. as levers to encourage healthier activity.

When Dr Chalmers takes up the development of the Predictor app again, he hopes to start linking it to this health programme, and use it to develop closer ties with football clubs and club branding. "We hope to get the app out there among tens or hundreds of thousands of people by tying it in to the major professional leagues in countries in Europe," he says.



The NFL wants all its stadia, including the FirstEnergy Stadium, to have both Wi-Fi and cellular access by the end of this year

Tony Dejak/PA Images

lost attendance between 2008 and 2011, forcing the league to alter television-blackout rules.

Alec Scheiner, President of the the Cleveland Browns, has said publicly that the club will continue to explore ways to improve mobile-phone reception and wireless connectivity within the stadium. However, bosses are undecided on whether to add a Wi-Fi service when other upgrades take place during the pre-2015 season. Scheiner said the improved mobile coverage should help fans to access the internet. "The improved DAS technology will serve as a test case for whether to install Wi-Fi," he commented. "If you're a consumer or fan, you really only care about being able to get on your mobile device, and that's what we're trying to tackle."

Fans who do not have AT&T or Verizon Wireless as their service provider would obviously be better served by Wi-Fi, which would enable any Wi-Fi-enabled phone or device to send and receive emails and texts, as well as use other in-stadium apps and access the wider Internet.

New requirements

The NFL has already pressed ahead with some stadia enhancements, including cameras in locker rooms, large video boards that show recaps of every play, and free access to its Red Zone cable channel for holders of season tickets. According to the league, it is now pushing requirements that all 31 of its full-time stadia adhere to new Wi-Fi and mobile-phone standards by the end of 2014. Crucially it wants all to have both Wi-Fi and cellular access, although it is not expected to penalise clubs for non-compliance.

For the Browns, it all depends on fans' feedback coming up to the 2015 pre-season. "The Browns know that seamless communication and the most up-to-date information is critical for fans throughout the game," stated the club management. If DAS upgrades and improvements alone do not satisfy the fans, the club will probably have no option but to install Wi-Fi.

There are specific issues relating to fan experience and stadium expenses that should be considered, according to Ryan: "The user issue is whether you, as a fan, want an app through a cellular carrier for use with stadium services or to browse the Internet to make a favourite site your starting point." Most fans will probably want the former, if they have to choose. Bandwidth is also an issue, according to Ryan. "Will the stadium be upgrading to provide the bandwidth or will the carrier?" he asks. "In the case of Wi-Fi, it is almost always the stadium that pays for the bandwidth. And, who is going to pay for the install?"

If Wi-Fi is needed to increase ticket sales, the club may decide it cannot do without it

The Browns will probably eventually add Wi-Fi to fully enable all services for all fans. However, it is up to the front office to decide what the club can afford to do. If it determines that Wi-Fi is needed to increase ticket sales, the club may decide it cannot do without it. ■

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Technology

Data security:
with great potential comes great responsibility

Laura Scaife examines the privacy and data-security issues for sports clubs as they push forward with fan connectivity, as well as the implications that new technologies have for law enforcement, crowd safety and integrity in sport

More than a billion smartphones were sold globally in 2013, and telecoms giant Ericsson predicts that there will be as many as 5.6 billion smartphones in use by 2019. The functionality and near-ubiquity of these smartphones is rapidly changing the way in which users engage with the world around them.

This has ramifications for the world of sport, as it has for many other sectors. Connectivity, interactivity and portability are affecting how people participate in sporting events, discuss sport issues and consume associated marketing content. New technologies are also a game-changer for sports governing bodies, clubs and athletes. While the opportunities presented are numerous, such innovation also creates challenges for those charged with security and integrity within sporting institutions. This article reviews the main areas for consideration at board level, covering commercial, regulatory, crowd safety and integrity-related issues.

Commercial benefits

Smartphone functionality enables sports fans to keep up to date with news, watch a game, connect with fellow fans, track related information, view offers, purchase tickets and other items. This happens whenever they want; wherever they are. Sports clubs can potentially hold data based on these interactions and deliver relevant content to devices. This real-time, global, personalised form of communication has its attractions. First, it offers sports bodies, clubs and players the chance to reach fans, both current and potential, across geographical borders for relatively low marginal cost. Second, it is sophisticated enough to enable specific targeted marketing, advertising, links to particular products in official online stores and so on. And this is only the start, as the full benefits are yet to be realised.

Consider a football club announcing its latest signing. There is potential for the club to dispatch to fans an email, text, tweet or in-game instant message containing a link to a web page showing a ready-to-purchase team shirt with the name and number of the new signing. In a few moments, a fan could select their size and enter the necessary financial and delivery details to effect the purchase. One sale might result in income in excess of £50 ($84) for the club.

> The full benefits of new smartphone technology are yet to be realised

There is also the option to send fans regular news updates about their club that are tailored to their individual preferences. Fans might begin to rely

Photos: Gerd Schnürer/Alamy, M4OS Photos/Alamy

To prevent match-fixing, Major League Soccer has banned the use of phones at certain times

Image Source/Getty Images

on such announcements for breaking news about their team well before it becomes available via other media sources. An added advantage here is that the club's public relations team can retain control over editorial content.

Another aspect of digital integration now gathering momentum is mobile ticketing. Fans increasingly want to make ticket purchases at the click of a button and take paperless 'virtual tickets' to events. The stock of data – including mobile phone numbers – that can be gathered from such transactions is helpful to clubs for texting links to the latest ticket availability information, traffic reports and competitions, for example. Data that can be sourced from individuals relating to their preferences, match attendance rates, site visits, location and similar are extremely valuable in terms of targeted marketing.

Securing the data

Such data must be gathered legally and with the necessary consents. In the UK, the Data Protection Act (DPA) 1998 is as applicable to sporting bodies as it is to other types of organisation when it acts in the capacity of a data controller (a person who determines the manner and purpose of the processing of any personal data gathered).

The DPA applies where there is processing of personal data (information from which a living individual can be identified) by a data controller who is established either in the UK (or another European Economic Area [EEA] state) and processing the data in the UK; or outside the UK (or another EEA state) but uses equipment in the UK for processing the data. Whenever personal data is collected, the sports body acting as a data controller must comply with the eight data protection principles that are set out in Schedule 1 of the DPA. Below is a brief introduction to these principles:

1. Where personal data are collected, this must be done so fairly and lawfully. This means that one of the conditions in Schedule 2 of the DPA must be satisfied, such as obtaining consent from the data subject (fan). The most common – and most advisable – method is to incorporate consent wording into an agreement (such as terms and conditions used when signing up to use a website or app). These terms should be accepted before the data are collected. The DPA does not define consent. The European Union (EU) Data Protection Directive (95/46/EC), on which the DPA is based, simply requires that consent is freely given, informed (Article 2[h], Data Protection Directive) and involves "some active communication between the parties".
2. Personal data can only be obtained for specific lawful purposes, and any processing of the data outside of these purposes is prohibited.
3. The fan (as data subject) must be made aware as to the purposes for which their data are being collected. For example, a club will need to state that the intended purposes of the data being collected include providing the data to third parties for the purposes of marketing.
4. Personal data must be accurate and up to date.
5. Personal data must not be retained for longer than necessary for the purposes for which they were originally processed.
6. Clubs and bodies must remove data which are no longer necessary – for example where the information was collected in anticipation of a one-off event such as the Olympics. Once this event has occurred, the sports body cannot use fans' data for non-authorised purposes.
7. Appropriate technical and organisational measures need to be taken to prevent any unauthorised or unlawful processing of, accidental loss or destruction of, or damage to personal data. It is therefore necessary to apply data encryption and have adequate back-ups of the data. This will be especially important in relation to geo-location data (see 'Crowd security', overleaf). The security should be both physical and technical and supported by robust policies and procedures in the event of a breach.
8. Personal data must not be transferred outside the EEA unless the recipient country has an adequate level of protection for data subjects. This is not necessary in a case covered by one of the limited exceptions – for instance, if the data subject has consented to such a transfer. The sports body must ensure that the data are kept either within the UK or the EEA when they are collected by themselves and when transferred to a third party. Where the servers for the third party are located outside of the EEA, there may be additional complications and requirements that need to be addressed. This will be of particular importance for international events that require the cooperation of a number of organisations.

Sports bodies should also consider the commercial advantages of providing data to third-party sponsors or affiliates, which can go on to conduct their own marketing activity with fans. If used correctly, data can be shared with sponsors and affiliates who may be able to use it in innovative ways to develop their own marketing strategies. This may increase commercial brand appeal when seeking official partners or sponsors. In such circumstances, appropriate consent to share the data with the sponsor should also be obtained.

Phone and tablet apps

Data protection also applies to the use of phone and tablet apps. If clubs choose to use apps, they should consider the following issues in relation to data security:

- Ensuring that customer data are kept secure.
- That third-party app developers are held to standards equivalent to those of a data controller (the DPA applies only to data controllers, not data processors, who merely process data on the instruction of a data controller).
- That the apps contain adequate privacy notices.
- If data are gathered about the fan while the app is running, and are to be used for behavioural or targeted advertising, then this should be made clear to the end user and the appropriate consents need to be obtained.

It is extremely important to ensure that data are always collected with the appropriate consents and kept secure. Sports bodies should always check that their marketing departments have taken these considerations into account when devising campaigns or conducting 'mail shots' to existing fans about whom they hold data.

Match-fixing and 'courtsiding'

In response to a speech on the global scale of match-fixing delivered at the 2013 Europol press conference, Major League Soccer (MLS) in the US took a proactive stance with new measures and controls, such as hiring a director of security and putting in place a 'soccer security agent' in Las Vegas to monitor gambling activity. Most interestingly, the MLS stated in a press release: "This season we are instituting a ban on phones and electronic communication devices from within the locker room 60 minutes prior to kick until match's end. This includes social media."

A blanket ban may have the advantage that it will assist, or at least limit, one avenue via which match-fixers can communicate with players and any others with influence on matches just before and during play. Whether electronic communication during matches is of particular concern to a sports body, it should consider additional terms in players' employment contracts to cover the use of technology and how to gain players' consent to be monitored if such devices are not banned outright.

Sports bodies should also consider the commercial advantages of providing data to third-party sponsors or affiliates

In gambling parlance, 'courtsiding' involves providing information for betting on sports fixtures from the area where the sport is taking place, in the time between the event occurring and it being relayed to betting agents. With the advancement in technology, the opportunity for syndicates and intelligent gamblers to use sophisticated models and instantaneous data to gain an advantage over the 'everyday punter' is arguably greater. The England and Wales Cricket Board revealed that 23 people were ejected for what was believed to be courtsiding in summer 2013.

Courtsiding became illegal in Victoria, Australia, in 2013. Under section 195C of the Crimes Amendment (Integrity in Sports) Act 2013, such an offence is defined as "engaging in conduct that corrupts or would corrupt a betting outcome", and it carries a maximum penalty of 10 years' imprisonment.

The crime takes place when a spectator at a sporting event passes on, or uses, information which leads to bets being placed on 'in-game markets' before the bookmakers receive the information and have a chance to change the odds. In the UK, it is an offence under section 42 of the Gambling Act 2005 to empower or help anyone to cheat at gambling. Those convicted face a fine and/or up to two years' imprisonment.

The practice is not illegal in many other countries, but sports bodies tend to have policies permitting organisers to eject an individual suspected of courtsiding. Policies at most sporting venues stipulate that portable units can be used to make calls and get texts. Any professional use is ordinarily forbidden, although venues are now clamping down more than ever on access to betting websites via their own Wi-Fi networks.

Whatever the scale of the problem, there needs to be clear guidance on 'courtsiding' on an international level

At the 2013 Australian Open in Melbourne, there was an alleged case of courtsiding, but the legislation required to conduct an arrest was not in place. The first arrest for alleged courtsiding was at the same event a year later, in January 2014, when a tennis player was accused of using an electronic device sewn into his shorts to secretly relay live scores to gambling associates, which had the potential to affect betting odds. However, police later dropped charges against the player.

It should be noted that it is arguable whether bets can be placed during any delay in broadcast. Not only do bookmakers generally apply a cut-off period to in-play bet placement to cover themselves, but they also have access to 'point streams' (information sent directly from the umpire's chair), allowing them to record events and suspend any relevant markets almost immediately.

Whatever the scale of the courtsiding problem, it is evident that there needs to be clear guidance on the issue on an international level to resolve the variation in approach of different countries.

As there are different rules in different jurisdictions concerning the legality of courtsiding, it is suggested that the time has come for the international bodies responsible for sports management to step up to the challenge and offer guidance on the use of new technologies at the courtside. Sporting institutions and clubs will need to decide what view they take on the impact of the issue upon integrity in sport. The board will need to consider how to incorporate this into ticket terms and conditions, as well as how to brief stewards on dealing with those individuals suspected of illegal activity.

Crowd security

When it comes to organising international sporting events, large numbers of people can harbour significant security risks. The dynamics of crowds of people cannot be measured easily, and security forces often need to be in the right place at the right time to react directly in the event of a critical situation.

At the London 2012 Olympics, a smartphone app was used for the exchange of information between the City of London Police and visitors. Using integrated crowd-monitoring technology, large groups could be tracked in real-time and given relevant security information. The smartphone apps of the City of London Police and the Westminster City Council sent sensor data collected by mobile phones to a server as thousands of fans were streaming through the centre of London. The data, which were given voluntarily and anonymously, were then analysed and visualised on a map. By using this kind of 'crowd monitoring', the City of London Police could follow the streams of visitors 'live' in their borough, recognise potentially hazardous situations early on and inform the visitors directly. If, for example, the system showed congestion at an underground station, the app could draw on its in-built messaging function to advise people to divert to an alternative station.

This kind of app illustrates the value, but also the sensitivities, of geo-location data. There is a strong feeling that a mobile phone is a more 'private' device than a landline, since it accompanies many individuals almost everywhere they go. Users may have an adverse reaction to geo-location tracking, and may turn their backs on sports bodies if they feel their privacy has been invaded.

While consent is a key concept, it has been noted above that consent is not defined in the DPA. This means that there is no clarity as to what it means to secure consent from a customer in respect of a location-based service. It is perhaps not surprising, therefore, that confusion arises as to the exact nature of the consent that is required in law to process geo-location data. What sort of information should the data subject be provided with to ensure that any ensuing consent is 'informed'? Does the consent need to be secured and renewed with each use of the location-based service?

Section 14, paragraph 4(b) of the Privacy and Electronic Communications (European Communities Directive) Regulations 2003, which deals with the issue of location data, states that: "a user or subscriber who has given his consent to the processing of data… shall… in respect of each connection to the public electronic communications network in question or each transmission of a communication, be given the opportunity to withdraw such consent, using a simple means and free of charge."

At Waterloo station and across the city, police used a smartphone app to share information with crowds during the London 2012 Games

On cold reading, Section 14 would seem to suggest that fans must be given an opportunity to withdraw their consent to the processing of their location data each time they connect to their mobile-phone network. However, the Directive (2002/58/EC) on Privacy and Electronic Communications, which the Regulations implement, suggests that subscribers should be able to withdraw their consent "for each connection to the network" (that is, they should be able to effectively switch on and off their consent in respect of each use of their phone).

In practical terms, systems can be put in place to ensure that app users remain anonymous and their sensor data is sent to the servers encrypted. Furthermore, the transmission can, in theory, also be limited to a particular area and activated only in critical situations for a defined time period and only with the explicit consent of the user. Consequently, the users decide for themselves whether at all, when and what data they want to make available.

Although such technologies have the potential to increase the security of sporting events, this must be balanced against individual privacy rights. Organisations should be asking what privacy measures and policies they have in place and how they will go about ensuring consent is obtained and to what extent they can justify monitoring

The issues explored in this article, and the points it suggests sporting bodies should be considering, involve a complex overlay of data, privacy, confidentiality and commercial law against a rapidly changing technological background that is altering how people engage with individuals and sports bodies. If harnessed correctly, data protection can be an effective, legally compliant way to increase data value for marketing and brand promotion – not only for a company, but also for its sponsors and partners. It can also increase confidence in the security of international events and crowd management, which, post-Hillsborough and 9/11, has been a significant concern. The most important issues that need further clarification relate to courtsiding and geo-location, which will require review at the highest level and the cooperation of international sporting bodies. But information exchange between sports bodies, law enforcement and gambling organisations is also a crucial area. These issues will be explored in detail in future editions of this journal. ■

Laura Scaife is a data protection, social media and privacy specialist with a sports focus.

Legacy

Sheffield tomorrow: the role of sport in the city's renewal

Richard Caborn, **Peter O'Malley** and **Shaun McCarthy** report on the Sheffield Initiative, a project to foster community leadership and social inclusion through sporting endeavour

Since the end of the industrial era in Sheffield and the advent of the information age, the city has experienced a transformation in its productive and social fabric. Gone are all but one or two of the steel foundries, and heavy engineering has given way to the information, biotech and nanotechnology industries.

At the same time, the city has seen the immigration of significant numbers of economic migrants from countries as diverse as Somalia, Pakistan, Poland and Romania, and has a growing Roma population. This mosaic of culture in an environment of relatively high and rising unemployment is placing pressure on the social fabric of the city. In contrast to the past industrial era, there are no shop stewards to provide community leadership roles (see box story on Sheffield's cultural history), certainly not in the sense of an integrated community. Indeed, each social group tends to carve out its own means of social interaction, and on occasion some groups have crowded others out from local-government provided facilities. The lack of social inclusion and interaction across ethnic and cultural lines is giving rise to concern about the future of social integration and even community stability in Sheffield.

In essence, Sheffield is suffering from a paucity of grass-roots leadership and a lack of individuals who as role models can help to break down barriers, facilitate integration and work towards a unified community. Identifying community leader replacements is much harder today. Various technological and social factors are driving individualism and transforming social interaction towards a reduction in physical contact in favour of virtual interaction through social media platforms, such as Facebook and Twitter.

In this environment, social activities that have the power to unite young and old, poor and affluent and

The 'Rules Derby', between Sheffield FC and Hallam FC, was first played in 1860

Paul M Thompson/Alamy

bridge divides across ethnic, gender and religious barriers become even more important than they were in the past. Among such activities, which include music, theatre, dance and so on, sport has a powerful role. Society looks to those men and women who perform in sport for inspiration, example and in some instances, leadership.

Sport for social and economic development

Sheffield has a long history of involvement in sport. In 1991 the city hosted the World Student Games, which gave rise to the construction of three sports stadia: the Sheffield Arena, Don Valley Stadium and the Ponds Forge Sports Centre. These were built before the national lottery era and so were funded by local authorities. Over the years, cricket has been replaced by football as the most played sport – both the main local football clubs started out as cricket teams. In fact Sheffield FC is the world's oldest football club. Today the diversity is such that the city has a club in every major team sport in England. Sheffield became the first UK National City of Sport in 1995, and is home to the English Institute of Sport (EIS).

In addition to Sheffield Wednesday and Sheffield United, Sheffield is home to top-flight ice hockey club the Sheffield Steelers, basketball club the Sheffield Sharks, and Premier League speedway club the Sheffield Tigers, as well as the Sheffield Eagles rugby league club.

In terms of facilities, Sheffield has the Hillsborough Stadium, home to Sheffield Wednesday FC, which sadly achieved notoriety as a consequence of the Hillsborough disaster in 1989, when a badly managed incident involving overcrowding resulted in 96 fatalities and 766 people injured. The incident is still the subject of controversy and inquiry today. Don Valley is currently the largest athletics venue in the United Kingdom; Sandygate Road, home to Hallam FC, is the world's oldest football ground; and Sheffield United's 33,000-capacity ground, Bramall Lane, has hosted major professional matches for longer than any other stadium. The World Snooker Championships has been held at the Crucible Theatre since 1977.

Another key attribute and potential component in helping to develop sport as an economic vector in Sheffield is its academic capabilities. Sheffield has two universities, the University of Sheffield and Sheffield Hallam University. The two universities, which were built at the start of the 20th century, bring 55,000 students to the city a year. Sheffield Hallam University arose from a number of independent colleges, which first joined together to become Sheffield Polytechnic in 1976 and was finally renamed Sheffield Hallam University in 1992.

The University of Sheffield is a research university. It has a partnership with The Boeing Company and is an integral partner in the city's Advanced Manufacturing Park.

A history of Sheffield's development

In 500AD, Anglo-Saxon and Danish settlements were present in the area of South Yorkshire that we now know as Sheffield. By 1296, a market had been established, now known as Castle Square, which was noted for the production of knives (giving Sheffield United its 'Blades' nickname).

In 'The Reeve's Tale', from Geoffrey Chaucer's *Canterbury Tales,* an early reference is made to the metal industry for which the town would become famous, and by the early 1600s it had become the main centre of cutlery manufacture in England outside of London. Technological advances in the 18th century led to the development of so-called 'Sheffield plate'.

The city developed as a melting pot of Welsh, Irish and Scottish minority populations in a largely indigenous Yorkshire population. Despite the loss of export markets in the 18th and 20th centuries and resultant recessions, the population rose from 68,095 in 1801 to 451,195 in 1901, and Sheffield was granted a city charter in 1893. During the recession of the 1930s, and with World War II looming, all of the steel factories were set to work manufacturing weaponry. As a result, it was targeted by German bombers during the war.

In the 1950s and 1960s, the city demolished slum areas, replaced them with the Park Hill Flats and started improving its infrastructure, putting a new system of roads in the city centre.

In the 1980s, Sheffield witnessed the destruction of its metal industry when Prime Minister Margaret Thatcher, after a long dispute with the steel workers unions, all but eradicated the traditional steel district and replaced it with the Meadowhall Shopping Centre. Forgemasters (founded 1805), which is the sole remaining independent steelworks in the world, is Sheffield's last steel manufacturer. It has a global reputation for complex steel forgings and casting, and is also certified to produce critical nuclear components, including for the Royal Navy's Astute submarines.

Daily Herald Archive/SSPL/Getty Images

A bomb crater in a Sheffield street following aerial bombardment in December 1940

In the period following the Industrial Revolution, the experiences and influence of the working class in the factories created a social fabric and structure within Sheffield's community. This social structure enabled the labour force to become organised within a unionised environment, with the role of union representatives, the shop stewards, taking on significant importance in terms of community organisation and leadership, both in and out of the workplace. Shop Stewards not only represented the labour force in its dealings with management and the ruling elite, they very often helped to regulate and shape community engagement and interactions.

Sport played a significant role in the social infrastructure

Sport also played a significant role in the community and social infrastructure, with a number of major companies providing multi-sports facilities as employee benefits. These sports centres were run and managed by employees. Unfortunately, with the changing industrial landscape, these facilities have disappeared.

The unionisation of labour dissolved the walls between home and family life and the factory floor, leading to workers' rights and bargaining power. However, the labouring class was always united behind the shop stewards. A number of socialist groups, the *Workers' Dreadnought* newspaper and women's rights advocates, such as Sylvia Pankhurst, accused union officials of getting too close to capitalists and comfortable in their emerging 'middle class' positions.

- **500** Anglo-Saxon and Danish settlement was present in South Yorkshire
- **1296** By this time, a market, now known as Castle Square, was established and noted for the production of knives
- **1600s** Became the main centre of cutlery manufacture in England outside of London
- **1740** The crucible steel process allowed for better quality steel
- **1801** Population: 68,095
- **1805** Forgemasters were founded
- **1893** Sheffield was granted a city charter
- **1901** Population: 451,195
- **1930s** Manufactured weaponry for WWII
- **1950s** Demolished slum areas
- **1960s** Infrastructure improvement
- **1980s** Steel districts eradicated

It received its royal charter in 1905 as successor to Sheffield Medical School (1828) and University College of Sheffield (1897). One of the original red brick universities, it is also a member of the prestigious Russell Group of research-intensive universities. In 2012, QS World University Rankings placed Sheffield as the 66th university worldwide and 11th in the UK. The year before, Sheffield was named 'University of the Year' 2011 in the *Times Higher Education* awards. Sheffield also has two further education colleges, Sheffield College and Longley Park College. Sheffield College was originally a merger of six colleges around the city, now reduced to four constituent colleges. The city also has 141 primary schools and 28 secondary schools.

It is through this combination of sports facilities and traditions, as well as its academic capabilities and the vision of the City Council, that Sheffield is embarking on two key initiatives: one to leverage sport for social inclusion and the other to develop a more diversified and robust economy through sport.

Social Inclusion Initiative

Recognising the power of sport to unite people, the Sheffield City Council, together with a range of strategic partners, and the ICSS, is exploring a project that will endeavour to develop new community leaders across the multi-ethnic divide of Sheffield's diverse community groups. The project will focus on:

1. Leveraging an existing enthusiasm and passion for football among Sheffield's youth, engaging them and selecting a number of young people to form a class of 2014 – a team that will be sponsored to participate in a football and leadership workshop at an appropriate sports facility and academy. This phase of the initiative will help forge new relationships among the participants.

In addition to professional athletes, the site will attract activities for the community

2. On the return of the Class of 2014 to Sheffield, they will be encouraged and assisted to schedule a series of football matches in their community and to encourage their families and fan base not only to support the matches, but to socialise after each fixture. The players will be coached on how to act as leaders in fostering better relations between the various community groups.
3. The initiative will then focus on both the youth and their families through two subsequent workshops using a proven 'Cities in Transition' approach and facilitation designed to help these communities to reduce barriers and better understand respective perspectives.

This initiative will run for a period of approximately 18 months, and dependent on outcome, a second class of young leaders will be nurtured in 2015. However, a key challenge in using sport to strengthen a sense of community spirit and identity is having access to sporting facilities. This issue is being addressed partly through the Don Valley Project.

Firth Court, the main administrative building at the University of Sheffield, also houses the molecular biology department

Steven Gillis HDP Imaging/Alamy

The Don Valley Stadium is due to be demolished and replaced with a 25-acre sport and well-being park for both professional athletes and the community

Chris Mattison/Alamy

The Advanced Park for Sport and Wellbeing

The Don Valley initiative was born out of a decision to demolish the old Don Valley stadium and better utilise the site, making allowances for some additional expansion and a tie-in with the EIS, the Grass Bowl, Ice Sheffield and Sheffield Arena, creating a 25-acre site upon which to establish an Advanced Park for Sport and Wellbeing.

This complex will not only offer state of the art sports facilities, but will also provide focus for world-class research capabilities in sport and health, a link to the Medical Advanced Manufacturing Research Centre, health technology initiatives and the Olympic Legacy National Centre for Sport and Exercise Medicine pilot in Sheffield. With the proposed Social Inclusion Initiative above, additional tie-in to social benefits are anticipated. In addition to providing a complex that can cater for professional athletes, this site will offer facilities to attract and house sports activities for the community in a locality that can also serve to inspire and motivate young people in the community. The proposed initiative will also complement the city with a unique, iconic sports and well-being campus of significant scale, on a par with any other in Europe. The campus will include:

- professional sports practised on site;
- community sports events as outlined in the Social Inclusion Initiative above;
- sports-related education and training;
- research and innovation;
- commercial accommodation, office space, sports retail, food and beverage outlets; and
- opportunity for a commercial leisure operator.

This complex will create a nucleus of professional sporting franchises and has the potential to leverage sports-related services, commerce and activities towards the development of a sports sector for Sheffield.

Long-term objective

In the long term, it is hoped that these two strategic and key initiatives will deliver both social and economic benefits for Sheffield, and insights for similar approaches in other economically distressed cities and socially marginalised communities. For example, as the Class of 2014 are recruited, oriented and nurtured in both their football and leadership skills, an effort will be made to identify and understand how culture and entrenched perceptions play a role in creating barriers towards better social inclusion and integration among cosmopolitan groups, and the impact that these factors exert on the socio-economic fabric and transformation of the city.

From the economic perspective, simply identifying the sports-related assets available to Sheffield from which it can launch the envisaged sports economy is not enough and will in all probability fail without a thorough understanding of the aspirations, hopes, prejudices and fears across the city's diverse communities. Developing strategies that embed social inclusion and help to make all of Sheffield's inhabitants feel that they also have economic opportunities and skin in the game of Sheffield's economic diversity will be a critical success factor.

For the creation of a sports-related economic industry or sector in any city, we also need to understand a range of other factors that underpin the governance structure, such as local government propensity and support, the management and shareholder structures of the sports teams and facilities, club fan-base and their influences, local communities that are both socially and economically active in the stadia or sporting facilities, how the more successful clubs have evolved and which factors have contributed to their successes and failures. Indeed, the construct of a model that can inform sports development strategies in other cities and regions is a key objective behind both initiatives in Sheffield. ■

The Rt Honourable Richard Caborn is a former Member of Parliament for Sheffield Central, and was UK Sports Minister from 2001-07.

Shaun McCarthy is Director of the ICSS Index, an initiative that is focused on assisting client cities to develop sports-related economic industries/sectors.

Dr Peter O'Malley is a co-founder of Ploughshares, an American literary magazine, and an expert on Sheffield's cultural history.

Performers from Brazil celebrate the handing over of the Olympic Flag during the closing ceremony for London 2012

Bloomberg/Getty Images

Europe funds four-year research project on sporting legacies

Terri Byers outlines the European Union-funded 'Carnival' project, a €850,000 initiative to discover why the legacies of major sporting events so often disappoint and to help formulate guidelines for future legacy planning

While the Sochi 2014 Winter Olympics were accomplished without major safety or security incident, a few controversies arose, including questions about the judging of the women's figure skating, some positive drugs tests, and the estimated $50 billion price tag for hosting the games.

It is this last issue, and the question of what long-term benefits will result from such a high level of spending on a sports event, that concerns governments and sports bodies in the long term. To put the Sochi cost figure in some perspective, it is twice the amount budgeted for the entire ITER project, which aims to develop viable fusion power that could solve the global energy crisis and reverse man-made climate change.

The use of mega-events to transform deprived areas is increasingly important

So what legacy can Russia and Sochi expect from the 2014 Olympic and Paralympic Winter Games? Unfortunately, the answer seems to be very little apart from some modern skiing facilities, improved highways and a very expensive rail line. How such a poor outcome could result from such a large, politically important event, and how legacy performance can be improved for future events, is the essential focus of the Carnival project, an EU-funded, global investigation into sporting event legacy.

Carnival involves a trans-continental network of research partners seeking to identify the constraining and enabling forces that affect the legacies of mega-events. The use of sporting and non-sporting mega-events to bring about transformation of socially deprived areas of major cities is becoming an increasingly important part of the raison d'être for hosting such events, especially given the immense costs involved and the current economic climate. Other suggested benefits of mega-events include economic, social and cultural gains, as well as infrastructural and technological advances in host countries. Yet the planned impacts and legacies of mega events are not often realised or fall far short of expectations.

The purpose of the Carnival project is to examine why these potential impacts may not be realised and what factors can be utilised to maximise these impacts to create sustainable legacies for mega-events. The research is underpinned by three pillars and their intersections. First, there is a focus on the three stages of managing mega-events – bidding/planning, management, and post-event programmes/activities – to capture the full range of temporal factors which may influence the realisation of impacts. Second, a wide range of impacts will be considered at the micro and macro levels, as well as a broad spectrum of constraining and enabling forces, including the role of leadership, corruption, gender issues, organisational structures and historical factors. Third, contextual features and cross-cultural analysis will provide a tapestry of case studies and enable a comprehensive analysis of similarities and differences between countries and types of event.

The aim is to identify best practices that will enable potential impacts to be realised by states and cities when hosting such events. This will enhance knowledge and understanding and encourage stakeholders to adopt sustainable and responsible mega-event management guidelines. The results of the project should also provide

Legacy

Where are they now?

1 Following the London 2012 Games, much of the Queen Elizabeth Olympic Park has opened to the public, and the main stadium will be home to West Ham United FC from 2016. However, the 'Inspire a Generation' rhetoric has failed to deliver a legacy of increased participation in sport by young people.

2 The Luzhniki Stadium, originally constructed in 1955, was the centrepiece of the 1980 Moscow Olympics. Since then it has been used by Torpedo Moscow FC and hosted other sporting and music events. The stadium is currently closed for renovations to prepare for the 2018 World Cup.

3 During the 2008 Games, Beijing's National Aquatics Centre, known as the Water Cube, hosted swimming, diving and synchronised swimming. The venue was then closed and converted into a leisure park, which now boasts rides, slides, wave pools, children's pools and a spa.

4 The Athens Games are generally regarded as having been a huge success, and the city was left with a much improved public transport infrastructure. However, many of the venues have fallen into disuse and disrepair, and some question the worth of the Games given Greece's current economic woes.

5 Just seven years after it hosted the 1984 Winter Olympics, Sarajevo was plunged into civil war. Most of the venues created for the Games were destroyed, and the bobsled track was used as field artillery positions by guerilla forces. To celebrate Bosnia's return to peace, Sarajevo bid for the 2010 Games, but failed to reach the shortlist.

6 The Centennial Olympic Stadium, centrepiece of the 1996 Games, was renamed Turner Field, but was more commonly known as 'Home of the Braves' after the Atlanta Braves baseball club. However, the Braves are vacating the stadium in 2016, following which it will be demolished.

7 Montreal's Olympic Stadium, where the opening and closing ceremonies, athletic and equestrian events were held during the 1976 Games, was nicknamed the Big O because of its shape. However, the name soon became corrupted to 'Big Owe' – the 1976 Games went spectacularly over budget, and the city only paid off its debt in 2006.

1) Nick Ansell/PA Images, 2) ITAR-TASS Photo Agency/Alamy, 3) EPA/Alamy, 4) Oli Scarff/Getty Images, 5) Slavko Midzor/PA Images, 6) 1020 Productions/Alamy, 7) Graham Hughes/PA Images, Map: Pingebat/iStock Images

Carnival project objectives:

1. Examine multiple contextual understandings of the impacts of mega-events, including social, economic, cultural, political, environmental and technological impacts, by recognising research synergies between partners and developing an extensive research portfolio of activity and outputs.
2. Understand, through comparative analyses of impacts of different types of mega-events, best practices in defining and managing mega-event impacts at future events.
3. Establish an active network of expertise on impacts of mega-events and realising potential impacts in the European Union, the Americas and South Africa through conferences, workshops and other activities.
4. Provide opportunities for research on cutting-edge sustainable management practices to ensure that future potential mega-event impacts (such as economic, social, cultural and technological impacts) are maximised.

Dates of Project: 15 November 2013 to 14 November 2017.

Project partners

PARTNER	COUNTRY	KEY CONTACTS
Coventry University (CU), (Lead Partner)	United Kingdom	Dr Terri Byers, Dr Ian Brittain
Universidade Federal do Rio de Janeiro (FEDRJ)	Brazil	Dr Francisco de Melo Neto
Technische Universität München (TUM)	Germany	Professor Jörg Königstorfer
Cape Peninsula University of Technology (CPUT)	South Africa	Professor Kamilla Swart
North Carolina State University (NCSU)	United States	Dr Jason Bocarro

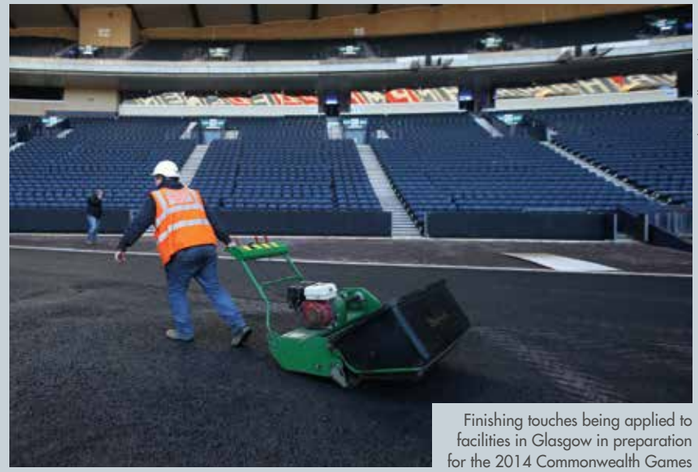
The UK experience: from London to Glasgow

Recent events, such as the London 2012 Olympic and Paralympic Games, have left organisers struggling to understand why their legacy objectives have not been realised, and this raises concerns for events that are to be staged in the future, such as the Glasgow 2014 Commonwealth Games. For all the planning, funding, structures, organisations, people and resources put in place, participation in sport has not increased significantly since the London Games, volunteering has not shown the steady increases that were hoped for and perceptions of disability have not improved; these were three legacy objectives for London 2012 and, thus far, they are unfulfilled.

Participation in sport has not increased significantly since the London games

While there are plenty of studies that focus on impacts, little empirical evidence exists that identifies the factors responsible for successful, long-term impacts or 'legacy'. Some rather obvious, if anecdotal, suggestions include staging a successful event, continued investment in legacy plans, a focused and an unwavering 25-year legacy strategy, but there are dangers in this rationalistic approach. In business, a high proportion of strategies fail due to rigid adherence to plans, despite all forces from the external environment suggesting a change is needed.

Perhaps organisers need to be more flexible, responsive to opportunities for positive engagement with communities, business, individuals or other stakeholders to create a lasting legacy from a mega-event. This continuous engagement with stakeholders is arguably the key, as they have different perspectives, needs and understandings, which may play an important role in delivering a legacy from a mega-event. Dr Anita Morrison, tasked with measuring the impacts and planning the legacy of Glasgow 2014 Commonwealth Games, is finding out how important it is to engage with existing programmes and communities in order to deliver the legacy message. At the Carnival launch event, held at the UK Department of Culture, Media and Sport), she commented that delivering legacy and communicating their intentions was much easier if done through existing programmes rather than creating something new and having to provide additional investment in order to market new initiatives.



Andrew Milligan/PA Images

Finishing touches being applied to facilities in Glasgow in preparation for the 2014 Commonwealth Games

tools to ensure the maximum return on investment for hosts in bidding and hosting mega-events, taking into consideration the type of event and a wide range of contextual influences, such as culture, time, political and economic factors. The project takes a trans-national, comparative approach to examine cultural differences in managing impacts of mega-events, primarily focusing on events in South Africa, Brazil, the United Kingdom, the United States and Germany.

Existing research

The potential impacts of mega-events are significant and well documented (Langen & Garcia, 2009; Tien, Lo & Lin, 2011, inter alia). The actual impacts realised by host nations and regions often fall far short of expectations in terms of economic and non-economic impacts in both advanced and developing societies (Jago et al, 2010). So Sochi will have to work hard to make sure there are any long-term positive impacts (legacies) as a result of the 2014 Olympic and Paralympic Winter Games.

It is widely acknowledged that legacy is both difficult to define and, therefore, difficult to measure (Gratton and Preuss, 2008). Gratton and Preuss are among the few authors to offer comprehensive suggestions for maximising mega-event impacts through a focus on legacy. Their suggestions are reasonable and considerate of a variety of impacts and contingencies. However, there is very little empirical evidence for why mega-events have failed to deliver lasting legacies, so a targeted approach, applicable across different types and sizes of mega-events is not currently possible. Carnival takes a new approach to research on managing legacy through a Critical Realist (CR) strategy and comparative case studies. CR is increasingly used across a wide variety of academic disciplines (see, for example, Easton, 2010) and is proving to be a powerful tool in generating knowledge about a subject that can be of direct use by sport managers and policymakers.

The past few decades have seen an increasing number of cities and countries bidding and hosting mega-events. Mega sporting events, such as Olympics/Paralympics and World Cups, require costly investment to cover bidding, hosting and post-event costs, but are often used by countries and cities as a strategy for national promotion, profit generation and re-imaging. Spending on bids alone can be costly to hopeful hosts – consider, for example, Chicago's failed bid for the 2016 Summer Olympics, which cost an estimated $100 million. Hosting mega-events has also proven both costly and difficult to budget for, with the Athens Olympics projected budget set at $1.6 billion and the Games ultimately costing between $11 billion and $16 billion. Projected costs for the Beijing Olympics' organising committee alone were reported as $1.6 billion, with a final budget including facilities and infrastructure totalling $40 billion.

Both Toronto and Pittsburgh recently chose not to bid to host mega-events

On the other hand, hosts are not blindly diving into bidding. Both Toronto and Pittsburgh recently chose not to bid to host mega sporting events. There seems to be increasing scepticism around the long-term benefits these events can create, as well as uncertainty over budgets.

This scepticism and reluctance to commit to hosting mega-events is understandable. Such events do not create legacies automatically. Indeed, significant amounts of planning and substantial post-event investment in programmes and people are needed in order to reap the benefits. This is a serious issue, given the increase in bidding and hosting of mega-events, as documented earlier, and the associated costs to cities and countries. If states or cities want to host events in the future, the likelihood is they will have to persuade taxpayers of the long-term benefits using credible data. Meanwhile, Carnival begins the task of putting that data together. ■

Dr Terri Byers is a project coordinator for Carnival, and is based at the Coventry University Centre for the International Business of Sport. Her research interests include how elite sport impacts communities.

Zero tolerance

Dr Miguel María García Caba, legal adviser to Spain's La Liga, speaks to **Javier Santos Núñez** about a new stance on match-fixing in Spain that looks set to change the way the problem is dealt with

The Professional Football League (Liga de Fútbol Profesional, LFP) in Spain has been taking a strong stand against match-fixing in recent years, pushing for regulatory changes and educating stakeholders under its 'tolerancia cero' (zero tolerance) banner.

Dr Miguel María García Caba, the LFP's legal adviser, has played an important part in pushing reforms. "Match-fixing is a serious problem that affects all countries due to [unregulated] sports betting which increases the threat of fraud. In Spanish football, clubs, players and the LFP must all be alert to the dangers. Bearing in mind the best way to combat fraud, we have proposed several changes to the regulations in Spain. Until now, the law has been inapplicable due to a lack of legal instruments. Until 2010, the Spanish Penal Code didn't recognise fraud in sport competitions. Now it does, but improvements can be made, and the system needs to be perfected. Previous legislation offered no legal tools [to combat match-fixing]. The Spanish football association (Real Federación Española de Fútbol, RFEF) and the LFP have sanctions as part of their regulations, but they are private organisations that don't have access to investigatory methods such as [covert] recording of conversations or analysis of financial records. With reform of the Penal Code, police and investigating judges will be able to use all the means at their disposal to combat fixing."

In recent years, there have been many examples of suspicious football matches in Spain, but there haven't been any sanctions. “We have had disciplinary hearings, with witness statements from players and staff, among others, as well as recordings of conversations, but we just don't have the judicial mechanisms to impose punishments," García Caba.

LFP president, Javier Tebas, has said that several matches in Spain have been fixed in recent seasons. According to García Caba, "the next step is to better define this type of crime in the Penal Code, making it an offence in its own right and introducing tougher sanctions. In other countries, like Germany, the fraud model has been adopted to punish match-fixing. It's possible that we may do something similar in Spain."

Recently, the LFP has signed an agreement with the gambling company Betfair and with industry body FederBet to help protect the First and Second divisions in the Spanish league against the effects of betting fraud. The LFP can request information on betting activity from Betfair, including data about individuals, if a threat to the integrity of a particular match exists. For its part, FederBet provides analysis of betting traffic to help detect suspicious movements and situations.

When cases are detected, Spanish football intends to impose lifetime bans on anyone directly involved in fixing matches, and a three-year ban on anyone who is shown to have had knowledge of a case, without reporting it to the relevant authority. Depending on the level of involvement of a club in fixing, it could be expelled from competitions.

"The LFP has been congratulated by UEFA on its strong stance against fraud and match-fixing. We have set up an Integrity Unit with the aim of guaranteeing the essential values of sport, maintaining football's credibility and integrity, and punishing any cases of fraud and fixing, and implementing preventive measures required by the EU, FIFA and UEFA. The Unit will maintain close communications with both the police and judicial authorities," García Caba explains.

"We have proposed changes to the regulations in Spain"

The LFP also wants to see the practice of 'primas a terceros' banned from the game. This is a phenomenon in which a third-party gives money to one of two competing teams depending on who wins. “For us, there is no difference between paying to win or paying to lose. We start from the basis that a team or player doesn't need to be given extra money to play their best. We're talking about ensuring that everyone is playing under equal conditions", says García Caba.

In addition, the LFP wants to see the creation of an Integrity Director at each club in the league. They would be responsible for implementing systems of prevention and monitoring against fraud within clubs, and "will act as liaison between the club and the LFP, with the obligation to alert and report any case that occurs, and advise players and managers," says García Caba. ■

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