IDC PERSPECTIVE

IOC Cloud Journey Completed for PyeongChang by Atos: A Buyer Case Study

Gard Little

EXECUTIVE SNAPSHOT

FIGURE 1

Executive Snapshot: IOC Cloud Journey Completed for PyeongChang by Atos

Since the Salt Lake City Games in 2002, individual solutions for cloud, analytics, mobility, or social technologies have been implemented at various times by Atos to support the overall digital transformation of the Olympics. But in 2018, PyeongChang, South Korea, will be the first Olympic Games where Atos is delivering all applications fully over the cloud for the IOC, and this is providing them with a 25% per year cost savings, which is being used to support the Organizing Committees that run the Olympic Games.

Key Takeaways

- Migrating applications to make them compliant with multiple public clouds is actually easier than might be expected when using open source cloud platforms like Cloud Foundry.
- Managing both physical and digital security operations in an integrated fashion makes sense because digital transformation blurs these old boundaries (e.g., monitoring social networks and sharing information about risks to physical or digital assets).
- Your organization may not run the Olympics, but the lessons learned about IT fitness, skills, and operations from this ultimate scale-up/scale-down activity are applicable outside of the sporting world.

Recommended Actions

- For application migrations in this hybrid, multipublic cloud world, select providers that understand how to implement applications on multiple clouds and that can help you navigate between clouds.
- Recognize that digital transformation is blurring almost all the boundaries inside, and outside, your organization, and acknowledge that service providers that can help you take advantage of that blurring should be of greater value (e.g., being able to manage physical and digital security).
- As projects go, the Olympic Games are about as high visibility as they get. Make sure you have selected a service provider that has proven itself worthy of delivering on a global scale with no room for error.

Source: IDC, 2018

SITUATION OVERVIEW

The International Olympic Committee's (IOC's) challenge is enormous. It must orchestrate the efforts of 200,000 employees, addressing 4 billion customers and operating 24 x 7 in a new territory every two years. Constituents include close to 15,000 athletes, 25,000 media, and over 30 technology partners. As projects go, the Olympic Games are about as high visibility as they get. From a technology perspective, this means during the games, the applications and underlying IT infrastructure can never be the reason for a delay, and further, the IOC can never lose critical information about the results of sporting events. To that end, Atos helps the IOC analyze how much system redundancy it needs depending on the demand for critical or real-time information – in some cases, up to four IT systems are running in parallel for redundancy, since asking athletes to rerun events like the alpine downhill final is not acceptable.

The scale-up/scale-down attributes of cloud solutions are well suited for the seasonality of the Olympic Games, two weeks of hyperactivity followed by two years of a relatively slower tempo, and 2018 marks the first time all the IOC's applications will be run in the cloud. This IDC Perspective will focus on the IOC's application migration, the interdependence of physical and digital security, and the IOC's future plans.

Application Migration

The IOC has successfully migrated all systems to the cloud that enable the games to run with a multiyear effort by Atos. The Olympic Management System's main applications are for accreditation, workforce management, and management of the competition schedule, and for PyeongChang, South Korea, all these are now hosted and managed in the Canopy Cloud (Atos' private cloud). This migration was achieved for the Rio Games, using the Embratel public cloud, but the IOC has selected Alibaba for public cloud services through 2028, so Atos has used its Canopy Cloud to orchestrate this change as part of its hybrid delivery model. All the Games IT critical applications, including Real Time Results, are delivered though Canopy Cloud, and this will continue for Tokyo and beyond (the IOC's current contract award was via a public tender, and Atos was selected to provide services through the 2024 Paris Games).

What allowed the IOC to achieve this level operational excellence in application migration? Using a cloud platform as a service (PaaS) such as Cloud Foundry will let the IOC focus on building applications, and data repositories, in the cloud without getting involved with building or running IT infrastructure. PyeongChang will be the first time all application integration and testing was done remotely from the host city, as Atos still had a testing lab in country as recently as the Rio Games. The open source design of Cloud Foundry gave the IOC the knowledge that its applications would be portable across different cloud environments (e.g., Embratel to Alibaba) and diminished the worry about cloud vendor lock-in. It turns out that migrating applications to make them compliant with multiple public clouds is easier than might be expected using this approach. This let the IOC keep Atos focused on building out DevOps teams to build new applications with open APIs that can last for decades, rather than a single Olympic cycle. Likewise, less time spent on infrastructure means more time that can be applied toward improving current applications developing a better customer experience or figuring out new ways to gain insights from data. Two examples are described in the Future Plans section, a new fan engagement model and new approach to ticketing.

The systems provided by Atos are used predominantly by nontech savvy customers – journalists, broadcasters, sports officials, and organizing committee employees in the HR, marketing, and sponsorship functions. The IT applications are for the Games and are divided into two groups:

- **Olympic Diffusion Systems will deliver real-time results to the media and the Olympic and Paralympic family of stakeholders.** The Commentator Information System provides real-time competition results to the broadcasters, while myInfo+ distributes to the media biographies of athlete and officials, as well as the news produced by the Olympic New Services. During the Rio 2016 Olympic and Paralympic Games, these systems processed and distributed 120 million messages to media customers to share the real-time results and data from all 66 Olympic and Paralympic sports.
- **Olympic Management Systems will allow the organization of the Games.** These are a suite of applications like workforce management, accreditation, and competition schedule that require a higher level of security on relation to personal data protection. They are often interconnected to highly secure systems such as police and government security operations.

Physical and Digital Security

Over 100 different IT systems/applications are used to support the Olympics, mostly commercial off-the-shelf items, but the accreditation system is custom and central to providing physical and digital security, in part because of the need to interface with local law enforcement. The Olympic credentials, issued by Atos on behalf of the IOC, are considered a secure form of identification in/around the host city, and for individuals who require a visa to cross the border into the host country, the credentials replace the requirement for a visa. The management of personal data registered for over 200,000 people is compliant with the personal data protection laws and regulations for both the European Union and the host city countries. Data analytics are used to filter, analyze, and trend tendencies around the vulnerability points identified across the accreditation infrastructure to protect how personal data is managed, processed, and accessed by specific authorized staff.

As a byproduct of analyzing IT and security operations after the 2016 Rio Games, Atos discovered evidence related to several cyberattacks that had emerged on social networks. Since Rio, Atos has been monitoring social media for clues related to potential security threats, and the IOC has increased its reliance on Atos for a blend of physical and digital security services. For PyeongChang and later for Tokyo, the security role of Atos has been extended from the organizing committees of the Olympic Games, and the IT systems for the Games, to include the IOC itself and the Olympic Broadcasting Service, which itself is a digital channel. For the first time, there will be an Atos-run security operations center (SOC) in PyeongChang in the International Broadcasting Centre to support the Olympic Broadcasting Service, complementing the main Atos SOC in Europe. This type of interdependent security management will not just be provided during the two weeks of the Games because the Atos Computer Security Incident Response Team will continually monitor for situational awareness and correlate data about potential threats for the IOC.

Future Plans

With just over two years to go until the Tokyo Summer Olympic Games, the IOC and Atos are already engaged in designing not only a better customer experience but also increased functionality for what will no doubt be the most mobile, content-streamed Olympic event ever. Increased functionality will come by enabling stronger fan engagement, something that is becoming increasingly important for the National Football League, the National Basketball Association, and European football. The IOC and Atos are focusing on improving customer experience and fan engagement via a new:

- **Ticketing platform.** The IOC is striving for a better fan experience through a new ticketing platform that provides a superior digital ticketing and hospitality experience to customers before, during, and after the events. The platform includes an automated centralized inventory that for the first time will instantly allocate quotas between client groups and the public. Real-time reporting over the consolidated public and hospitality repository should maximize spectator attendance. Supported by Atos Codex, the company's analytics platform, the ticketing platform will be used to promote fan engagement services. The new ticketing platform enables data from those buying tickets to be collected and analyzed to better target marketing campaigns and provide the fan with the information they need to enjoy the Games (e.g., how to access the venues, where to find the best place to buy food and drinks). The identity and access management function is intended to prevent fraud and secure ticket sales (e.g., ticket bots) and black market sales through digital tools and advanced data analytics.

- **Unique ID platform.** The unique ID platform will be able to treat each person as an individual through carefully coordinated and targeted communications, rather than multiple, uncoordinated communications from different channels, which may disengage citizens. This improved customer relationship management capability should drive better engagement with customers, volunteers, and fans before the Tokyo Games and form part of the post-Games digital legacy to get more people involved in sports, arts, and cultural events. Atos' experience as a global systems integrator helps the IOC to ensure the unique ID platform will meet the security and privacy compliance requirements of the European General Data Protection Regulation (GDPR) as well as other region data protection compliance mandates.

- **Spectator app.** TOKYO2020 is the name of the application that spectators will be able to download from an app store to have handy information for the Games. It is being built and tested to enable TOKYO2020 to target communications to each of the 10 million Japanese citizens expected to engage with the Games. While the technology will work for Japanese and non-Japanese alike, the initial focus is on Japanese citizens simply because they will engage more with the Olympics in the run up to the games, for example, by attending test events. TOKYO2020 will have the capability to tailor messages to fans to improve their Olympic experience in the run up to, and during, the Games. Both the length of time that fans will be engaged and the level of integration with other functional areas (e.g., transport, merchandising) are anticipated to provide a more holistic and satisfying spectator experience, which should grow revenue and promote the image of Japan and the Games. As each successive Olympics Games breaks the record for "most mobile games ever" in terms of amount of content accessed, the IOC focus on extending spectator application functionality and integrating it with pre- and post-event functions will be central to its goal of improving overall customer experience.

Cross-Industry Applicability

You may wonder, if your organization does not run Olympic-size sporting events, is any of this case study relevant. IDC believes most of the IOC's lessons learned apply across other industries, but their interpretation does need to be guided by deep industry experience on the receiving end. Key lessons learned include:

- Engagement with business owners is mandatory to ensure that applications are transformed into logical business and/or technology clusters.
- Vendors must provide consistent support to both technical/cloud savvy business owners and nontechnical business owners; this helps promote the use of standard technology and minimize the need for niche/boutique solutions.

- Maximize the use of cloud applications rather than on-premise, and use Open APIs to design or redesign applications with a time frame of 20+ years in mind.
- Design for operation in multiple public clouds to avoid public cloud application lock-in but also consider how to minimize data lock-in.
- End-to-end testing is still required, but it can be done in a geographically remote location.

Beyond IDC's belief in the cross-industry applicability of these lessons learned, the fact that its work with the Olympics is helping Atos to win projects in other geographies and markets makes the point as well. It stands to reason that if Atos can successfully move the IT for a global, high-profile, highly critical event to the cloud for one client, that other clients will conclude it is the right partner for their digital transformation.

ADVICE FOR THE TECHNOLOGY BUYER

- **Refocus vendor lock-in concerns toward your data rather than applications.** For application migrations in this hybrid, multipublic cloud world, select providers that understand how to implement applications on multiple clouds and can help you navigate between clouds. But as application migration becomes relatively easier, challenge your providers to explain approaches for data migration that similarly prevent vendor lock-in at the data level.
- **Conduct security audits that integrate physical and digital operations.** Recognize that digital transformation is blurring almost all the boundaries inside, and outside, your organization, and your security plans need to adapt to this interdependence. Also, acknowledge that service providers that can help you take advantage of that blurring should be of greater value (e.g., being able to manage physical and digital security).
- **Choose service providers whose own IT fitness is a model for your own.** As projects go, the Olympic Games are about as high visibility as they get. Make sure you have selected a service provider that has proven themselves worthy of delivering on a global scale with no room for error, because as the physical and digital worlds continue to converge, IT no longer just supports the business, it is the business.

LEARN MORE

Related Research

- *Worldwide Whole Cloud Forecast, 2017-2021* (IDC #US43215817, December 2017)
- *Cloud Foundry Embraces Kubernetes, Expanded Multi-Cloud Support, and Node.js as it Continues to Invest in Cloud-Native Application Development* (IDC #lcUS42808617, June 2017)
- *Digital Transformation for the Olympic Games: IOC Changes IT Infrastructure Strategy to "Build Once, Use Many Times"* (IDC #256716, June 2015)

Synopsis

This IDC Perspective describes how the International Olympic Committee's (IOC's) multiyear journey to the cloud has been enabled by Atos, with a focus on project activities over past two years after the Rio Games. Since the Salt Lake City Games in 2002, individual solutions for cloud, analytics, mobility, or social technologies have been implemented at various times by Atos to support the overall digital

transformation of the Olympics. But in 2018, PyeongChang, South Korea, will be the first Olympic Games where Atos is delivering all applications fully over the cloud for the IOC.

"You may be wondering, if your organization does not run Olympic-size sporting events, is any of this case study relevant," notes Gard Little, research director, Digital Transformation: The Professional Services Opportunity, "But Atos discovered that the lessons learned are applicable to all organizations moving applications and infrastructure to the cloud, not just sporting organizations."

About IDC

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Global Headquarters

5 Speen Street
Framingham, MA 01701
USA
508.872.8200
Twitter: @IDC
idc-community.com
www.idc.com