Achieving NZCIS's vision for a smart sports city

Client profile

One of the most technologically advanced sporting facilities in the world, the New Zealand Campus of Innovation and Sport (NZCIS) is transforming how the next generation of athletes train, recharge and play in New Zealand. Following a major renovation and new build, this state-of-the-art facility now houses commercial office space, conferencing, dining, accommodation, and a sports hub and athletes' village.

Which technologies?
- Cisco SD-Access
- Cisco Firepower
- Dell Isilon

Which services?
- Managed Network and Collaboration Services (MNCS)
- Service Desk
- PSTN (Cloud Comms)

Which partners?
- Dell Technologies
- Cisco

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We saw the work NTT was doing with INDYCAR and Tour De France, and it was inspiring. We are an innovation hub and NTT is a great partner to maintain our reputation and achieve our vision.

Jamie Tout, Performance Institute General Manager (Director), NZCIS

Summary

We partnered with the property development and sports excellence team behind the New Zealand Campus of Innovation and Sport (NZCIS) to create the ultimate digitally enabled, multi-tenanted sports-training campus. At its heart is IT infrastructure that's designed for data collection, analysis and results – like giving teams and athletes using the campus the edge over their competition, building new revenue streams for clubs and creating engagement opportunities for fans unlike anything they've experienced before. This will also enable the region (and New Zealand) to attract greater international sporting interest and investment.

![NZCIS logo]

Business need

Creating a world-leading, high-performance sporting campus

For the developers of NZCIS, the goal was to create a campus that would be a real "game changer" in enabling sports teams and athletes to perform at their peak. This was built on the vision and drive of the founders, Mal Gillies and Kev Melville, who saw the potential of taking and repurposing the old and blending it with the new.

To benchmark against the best facilities globally, they traveled the world to survey the facilities of major professional sports clubs. They consulted with Manchester United in England, visited football and rugby powerhouses in Europe, and went to see what the New York Giants and the Singapore Institute of Sport were offering. Back home, NZCIS asked sporting teams and bodies what they wanted, and incorporated their feedback into the design of the facility.

"There are some English Premier League clubs that don't have access to some of the gear that's in here, so it's incredible to see what our teams will get to train with," says Wellington Phoenix FC General Manager, David Dome.

In addition to providing world-class facilities for their tenants, NZCIS wanted the campus to enable digitally driven revenue streams and data-rich value-added services for the clubs and teams using the facilities, as well as their fan bases. Key to achieving this goal was designing and building an IT infrastructure optimized for both digital enablement, and data collection and analysis.

To support NZCIS in reaching their goal, NTT was brought on as their technology partner for the entire facility. We came in at the early stages of planning to ensure that the technology and digital potential of the new campus could be fully enabled.

Solution

Aiming for world's most digitally advanced sporting facility

Working as the technology lead from the inception stages of the project, we focused on the interoperability of every digital platform and device anticipated to be in use across the campus, as well as on the management and utilization of data that would be captured in this digitally enabled sports environment.

We leveraged our own intellectual property and skill sets from similar smart-city and smart-sports projects from around theworld, including the Tour de France, NTT INDYCAR Series and City of Las Vegas.

A backbone for connectivity and digital content

The backbone for our solution is a highly available, software-defined wired and wireless network, leveraging Cisco DNA, that ensures all parts of the campus have connectivity. There is also sufficient capacity and throughput to handle 4K video content from various cameras that record training footage, and the data from thousands of sensors and devices in use in the various facilities and by athletes in the center.

The Cisco SD-Access network also provides intelligence, flexibility and policy-based automation that allowing new users and devices to connect to the services and the resources they need, securely and seamlessly.

A foundation for future functionality

By developing a set of reference architectures and taking a secure-by-design approach, we mandated that any new technologies deployed in the future must first meet the requirements established in the reference architecture. This ensures NZCIS achieves the interoperability required to fully utilize the benefits of any future technologies, and can ingest and analyze the data generated. It also ensures that there is full visibility of all devices and users connected across the network, from the infrared sauna to the cryotherapy chamber in NZCIS's recovery wing. This visibility is essential for us to manage the entire environment remotely, maintaining security and operational functionality at all times.

On-site storage and compute

We also deployed an on-site data center storage and compute environment, powered by Dell Isilon, that delivers the fast processing and low latency required for real-time access to the center's CCTV footage and for specific sports applications, such as Hudl, which enables the real-time coding, analysis and distribution of video content.

Cross-team collaboration for successful delivery

To ensure that every piece of technology could be integrated and deliver data insights across the entire campus, we collaborated with multiple contractors, fitting in with construction deadlines and timescales.

Outcomes

Creating a home-ground advantage

The Wellington Phoenix FC men's and women's teams became the first NZCIS tenants and had full access to the state-of-the-art facilities in preparation for the 2022–23 A-League season. In addition, teams and athletes experience a fully customized branded experience. In the future they'll be able to integrate the campus scheduling and booking system with digital signage and audio displays so the team's branding and messaging can be displayed wherever they are using the facilities.

Video from broadcast-quality cameras on the training fields is fed into the data center and the footage is made available to the sporting team to edit and reuse for analysis, fan outreach and promotional initiatives.

NZCIS also anticipates there will be unique benefits to teams from sharing a training campus with other sporting codes. "The venue is sensational. I think it's going to be great when the other sports teams will be in here, and I think there will be a lot of opportunities to collaborate," says Ufuk Talay, Wellington Phoenix's Head Coach.

Tapping into future potential

For NZCIS to fully realize the future potential of the campus, we constructed a consumption-based commercial model for the project and the ongoing operation of the environment. The model is aligned to NZCIS's revenue streams and has a scalable technology and managed services support structure that can adapt to increasing usage demands and the data load on the system over time.

Now that they have the platform in place to collect and analyze an incredibly rich set of data, NZCIS are looking at other innovative applications as well as monetization and commercialization opportunities – including nonfungible token (NFTs), benchmarking and gamification.

Attracting international sporting investment

Ultimately, the advanced digital technologies and capabilities that we've incorporated into the campus experience will attract athletes and sporting teams from all around the globe and provide a significant contribution to the region's economy. A report into the economic value of sport and active recreation to New Zealand, conducted by Sport NZ, has indicated that the advancement of local sports facilities can contribute NZD 4.9 billion to New Zealand's annual GDP.

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> NTT has provided the 'secret sauce' on what technology can play nicely together, establishing the architectural standards on what will work on the platform. Together, we've built a really cool racetrack with NTT where our teams are the race cars and the athletes using the campus are the drivers.
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> **Jamie Tout,** Performance Institute General Manager (Director), NZCIS