CLOSING CASE STUDY 2.1

ironman IN HAWAII

2011 was a great year for Australian Ironman competitors, who came first (in record time) and second in the men's section, and second in the woman's section. Triathlon Australia couldn't have dreamt of a better result. Florida-based World Triathlon Corporation (WTC), owner of the Ironman Triathlon World Championship, is in the business of fulfilling dreams—the dreams of endurance athletes to complete one of the world's most gruelling events. The Ironman Triathlon World Championship brings more than 1700 of the world's top endurance athletes to rugged Kailua-Kona, Hawaii, for a world championship race every October. Athletes attempt to swim 3.9 kilometres, cycle 180 kilometres and run a full 42.2 kilometre marathon—all in a single day. The event features a remote course that threads around the side of an active volcano and offers breathtaking vistas, but also rough terrain, shimmering heat and shifting trade winds.

In the past, it wasn't easy for family and friends to know how their son, sister, friend or colleague was faring in the contest. Even those who could afford the trip to Hawaii were 'in the dark' about their athlete's progress. 'As a spectator, you'd see the start and then the athletes would disappear and that was pretty much it until the finish line,' recalls Dave Scott, who ran his first triathlon in 1976. Using mobile technology, long-range WiMAX networks and wi-fi-enabled hotspots, the Ironman is transforming the way audiences and athletes experience the race. By using WiMAX to enable remote cameras at locations along the course, Ironman raised the bar for professional sports broadcasting. It also spotlighted a technology many say is going to help bring the next billion users into the internet community.

People worldwide can now look at any athlete and find out where he or she is on the course and at what speed he or she is moving. WTC makes this possible by using WiMAX to provide high-speed broadband connections in various locations along the arduous 225-kilometre course. The company uses radio frequency identification (RFID) to track the athlete's progress and high-bandwidth communications to transmit professional-quality video and other data, and makes the information accessible over the Ironmanlive.com website.

Networking the course was a challenge because of the same factors that make the race challenging for the athletes. 'We're on a very rough, rugged course on an island with an active volcano,' explains Dan Gerson, Ironmanlive.com production manager. 'It's hot, it's windy and there's no infrastructure. If you can deploy WiMAX here, you can probably deploy it pretty much anywhere.' Airspan Networks provided the WiMAX infrastructure, using its high-performance base stations and subscriber stations to create a high-throughput network backbone capable of transmitting data rates required for top-quality video. The team set up its base station on top of the hotel that served as the event's starting point and finish line, which also happened to be one of the lowest geographical points of the course. The team was operating in a non-line-of-sight environment, where highly porous volcanic rock absorbed the wireless signals more than other types of rock would.

Airspan set up relays on the ridge sides of the volcano, the side of the road, the sides of buildings—anywhere to keep the fidelity of the signals. Some cameras were in locations without power, so they used generators. This set-up was a wireless deployment in every sense of the word, and a great demonstration of the viability of WiMAX technology.

Athletes were filmed as they passed by the WiMAX-enabled video stations equipped with network video cameras. That footage was incorporated into the live webcast, along with pre-event interviews, commentary, footage shot from cameras on motorcycles and helicopters, and other content produced by the Ironman team. WTC produced the broadcast at the event site in a live production studio that streamed the video data to the global servers that run the Ironmanlive.com website.

In addition to these video-enabling technologies, Ironman used other wireless technologies to bring the athletes and their fans closer. For example, Ironman employed RFID technology to track each athlete's progress along the event route and maximise accuracy and safety. Each athlete wore an ankle bracelet with an RFID tag and, as a competitor crossed over one of 12 timing mats spread throughout the course, the RFID tag communicated to a reader that captured the athlete's times, and that information was relayed over the wireless network to a server and recorded on their database. Seconds later, this information was available on the Ironmanlive.com website, where spectators and viewers at home could see the athlete's pace and timing. Many viewers stayed on the website throughout the event, monitoring their athlete's progress.

WTC also set up eight wireless hotspots, including five along the event course and at the finish line. An internet cafe was stocked with notebook and handheld computers, providing convenient, wireless access to event information and the Ironmanlive.com site. Two giant-screen displays showed the live program coverage from Ironmanlive.com. Staff used additional notebooks and handheld devices to manage the race and access information on each athlete's progress. For example, if an athlete needed medical care, the healthcare team used a PDA to scan their RFID tag and instantly access medical records and local contact information.

Ironman's transformative use of wireless computing makes for sound business success. The compelling programming solidifies the respect WTC earns for its sports broadcasting leadership. It also drives larger audiences and higher advertising revenues for WTC and NBC, which uses WTC's Ironman Triathlon programming in its own broadcast of the event a month or two later. Larger audiences and better experiences for athletes and their families ultimately lead to greater participation in the Ironman Triathlon and its more than two dozen qualifying races, and to growing popularity for the sport.[22]

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Questions

1. How is WTC using telecommunication and network technologies to improve its competitive advantage in the professional sports broadcasting industry?
2. Describe the different types of network architectures WTC is using.
3. Explain the role TCP/IP plays in the broadcast of the Ironman Triathlon World Championship.
4. Identify a new telecommunication or network product that WTC could use to improve its operations.
5. What security issues does WTC need to address?