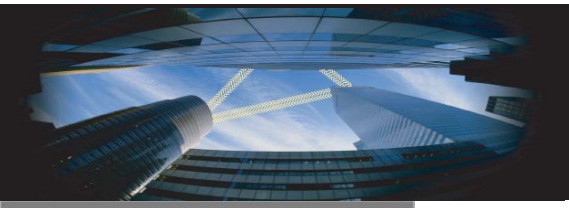
BridgeWave



Case Study

# Oregon Judicial Department

**State of Oregon Judicial Department Project Presents a Winning Case for BridgeWave's GigE Wireless Links to Remove Bandwidth Bottlenecks while Lowering Network Costs**

In the early 1980s, Oregon's Legislative Assembly took an innovative step by going to a state funding model of its statewide district courts, circuit courts, tax court and appellate courts and creating one unified court system known as the Oregon Judicial Department (OJD). In continuing to shape Oregon's third branch of government, the OJD embraces leading-edge technology to support the evolving business practices and information needs of the Supreme Court, Court of Appeals, Tax Court and 36 circuit courts in 27 judicial districts.

An experienced 15-member technology team oversees OJD's IT infrastructure, comprising Windows file servers, Exchange email servers, IBM AS/400 mid-range computing systems as well as a series of courthouse scheduling, case management and financial reporting applications. Technical support for more than 2,000 OJD employees ensures that judges, attorneys, paralegals and administrators can access and share vital court documents and case files that reside on the Oregon Judicial Information Network (OJIN). Currently, a combination of single and multiple leased-line T1s connect 70 remote sites to a high-speed backbone powered by Qwest's frame relay services.

> ***"Our high-speed GigE link gives us a 'future proof' solution that can support other progressive technology initiatives, such as our planned move to an electronic, paperless courthouse environment. We're also considering BridgeWave links for at least a dozen other sites around the state where we need greater bandwidth and want to eliminate costly monthly access fees."***
>
> ***- Brian Canfield***
> *Network Administrator*
> *State of Oregon Judicial Department*

According to Brian Canfield, network administrator for the Oregon Judicial Department, the challenges of maintaining the statewide network grew considerably over the past decade. For example, most of the OJD's courthouses provide ubiquitous wireless access and public Internet kiosks while video capability has meant OJD's staff of interpreters and court experts no longer have to travel to courts when their services are required. "Technology has transformed many aspects of how the courts operate but one rule remains the same," explains Canfield. "The OJD must guarantee the highest levels of network availability as the judges expect zero downtime."

## THE CHALLENGES

In addition to maintaining maximum network uptime, the OJD's IT team is responsible for supporting end-users with exceptionally fast and efficient technical assistance. Over time, however, insufficient network capacity slowed the network and impacted everyone, including the help-desk team. "Opening and closing trouble tickets with attachments took forever, impeding our ability to resolve end-user issues quickly," Canfield says.

Another growing problem was the bandwidth bottleneck that occurred when uploading or downloading large files. To avoid performance degradation, Canfield often drove to the OJD's data center, located in the Supreme Court building in Salem, to take advantage of its 100Mbps Internet connection. "Resorting to 'sneaker net' for handling bandwidth-

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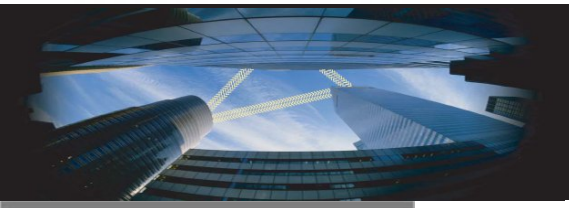

Case Study

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intensive traffic became a regular occurrence since the multiple T1s linking the network operations center to our backbone couldn't handle large files without bringing performance to a crawl," he says.

In early 2007, the leases for the two buildings that housed OJD's network operations center (NOC) ran out, providing the opportunity to consolidate facilities as well as gain access to a high-speed link to the frame relay backbone. Unfortunately, the new facility, which was located about a mile from the Supreme Court, lacked any access to fiber connectivity. The OJD then was faced with the prospect of trenching to the Supreme Court or a closer fiber access point, continuing to struggle with inadequate multiple T1 links or find an alternative backbone connectivity solution.

## THE SOLUTION

In seeking alternatives, the OJD briefly considered microwave, point-to-point 54Mbps outdoor wireless technologies, but both were rejected because the team wanted bandwidth and reliability comparable to fiber-optic based solutions.

The OJD explored several ways to gain fiber access, all required expensive and time-consuming trenching. The first option involved digging a trench to an adjacent building with the nearest fiber connection. The cost for the short "hop" to the fiber hub, however, exceeded $150,000 in addition to per-month usage charges of $4,800. The OJD next assessed the possibility of running a mile-long fiber link to the Supreme Court building, but this required a one-time fee of $250,000. "The charge far exceeded our budget, so we didn't even wait to hear about the recurring fees," recalls Canfield. "We had to find an easier, faster and much more economical approach for linking the facility to our high-speed backbone."

The OJD resumed researching wireless technologies and soon focused on Gigabit wireless outdoor point-to-point products. The team discovered BridgeWave Communications, a pioneer in providing 100Mbps and Gigabit Ethernet solutions in both the 60GHz and 80GHz frequency ranges. In particular, the OJD was impressed with BridgeWave's exclusive AdaptRate™ capability, which momentarily switches from GigE to 100Mbps data rates to penetrate intense cloudbursts, providing continuous operation even under adverse conditions. "When I saw the AdaptRate feature, I was sure this was what I needed," Canfield adds. "It also was clear this technology could provide substantial bandwidth at a fraction of the price of the fiber-based options."

OJD performed due diligence on BridgeWave's GigE product performance and spoke with several customers in the Washington-Oregon area to gain validation of network uptime despite the region's frequently inclement weather. The OJD also used BridgeWave's link analysis tool to determine whether "five nines" network availability could be sustained with the company's license-free AR60 60GHz product. The team was equally impressed with the inherent security of the narrow antenna beamwidths, which provided superior interference immunity and enhanced data security—both major considerations for transporting sensitive judicial information.

An ROI model proved the economic value proposition of the GigE wireless solution, which the OJD estimated would pay for itself in little over a year when compared with recurring monthly fees of $4,800. "We didn't even have to take the exorbitant trenching fees into consideration when performing the cost-benefits analysis of the BridgeWave AR60 vs. fiber-

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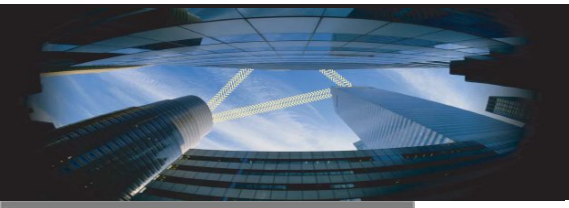
BridgeWave



Case Study

# Oregon Judicial Department

based alternatives," notes Canfield. "By comparing the cost of the bridge with the recurring charges alone, the AR60 was a much more compelling choice."

Aided by ezWireless, a Portland, Ore.-based provider of broadband wireless technology solutions, the OJD selected a "double hop" configuration to circumvent the lack of line-of-sight with the Supreme Court building. They linked the network operations center first with the state's Public Services building that was a block away, which then connected easily to the Supreme Court site.

## THE BENEFITS

The implementation of the OJD's multiple AR60 radios went flawlessly, with ezWireless completing installation, testing and alignment within a week. "I still recall the round of applause from the help-desk team the day the GigE wireless link went live," says Canfield. "Tech support was able to open and close trouble tickets instantly; they had never experienced such fast network performance."

With vastly improved network performance, the tech support team now can rebuild a failed desktop remotely in less than five minutes. "The boost in our customer support is hugely beneficial," notes Canfield. "If a judge's workstation crashes, we can restore the system very quickly by re-imaging up to four gigabytes of data and transporting it over the network without any impact on other network users." The high-capacity network link also removes the "sneaker net" trips to leverage the Supreme Court's 100Mbps Internet connection for retrieving and/or sending large files because the BridgeWave AR60 GigE link delivers 10 times more bandwidth.

The highly reliable BridgeWave link has maintained "five nines" network uptime with no discernible performance difference when the AdaptRate feature is activated due to heavy rain. Another plus is extremely low-latency transmission, which is ideal for handling OJD's ever-increasing use of video as well as planned migration to Voice over IP.

The BridgeWave AR60 links have worked so well that word has spread. The OJD has fielded inquiries from the state's legislative branch as well as from neighboring Washington interested in their experience. "Our high-speed GigE link gives us a 'future proof' solution that can support other progressive technology initiatives, such as our planned move to an electronic, paperless courthouse environment," concludes Canfield. "We're also considering BridgeWave links for at least a dozen other sites around the state where we need greater bandwidth and want to eliminate costly monthly access fees."

## CUSTOMER QUOTE

*" Our high-speed GigE link gives us a ' future proof' solution that can support other progressive technology initiatives, such as our planned move to an electronic, paperless courthouse environment. We' re also considering BridgeWave links for at least a dozen other sites around the state where we need greater bandwidth and want to eliminate costly monthly access fees."*

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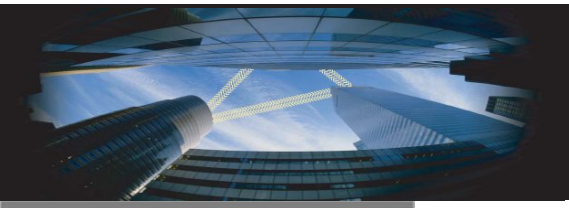

Case Study

# Oregon Judicial Department

CUSTOMER:
State of Oregon Judicial Department, based in Salem
www.ojd.state.or.us/

INDUSTRY:
Government

CHALLANGES:

- Inadequate bandwidth connectivity to the network backbone impacted tech support and customer service efforts.
- Uploading/downloading large files often required "sneaker net" solution to avoid significant network degradation.
- Expired building lease forces relocation of NOC to new location—one with no direct access to fiber.

SOLUTION:
BridgeWave AR60 wireless links.

CHANNEL PARTNER:
ezWireless, a network integrator based in Portland, Ore.
www.ezwireless.us

BENEFITS:

- Increased bandwidth enables tech support to rebuild remote desktops in less than five minutes.
- ROI of less than one year just in eliminating recurring monthly access fees.
- Low-latency performance is highly suitable for video and impending VoIP deployment.
- "Future proof" technology is the preferred high-speed connectivity solution for planned network upgrades at a dozen or more sites.

CASE STUDY

BridgeWave

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