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NTT's 'Parallel Travel' offers immersive innovation

Osaka expo

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The NTT Pavilion at Expo 2025 in Osaka is drawing significant attention for its ground-breaking "Parallel Travel" concept. Powered by NTT's next-generation communication infrastructure IOWN (Innovative Optical and Wireless Network), the pavilion offers an immersive experience that transports visitors through time and space. The cutting-edge installation engages not only sight, sound and touch, but also taps into human emotions — allowing guests to physically sense the future of communication.

Spanning 3,500 square meters, the NTT Pavilion boasts the largest footprint of any privately sponsored installation at the expo. Inside, the experience unfolds across three sequential zones exploring how communication may evolve in the years ahead.

Zone 1

The journey begins in Zone 1, where humanity's enduring desire to connect across distances is brought to life through immersive visuals and dramatic staging on a large screen. This installation not only retraces the history of communication tools, but also explores the emotional and spatial disconnects that conventional technologies have struggled to bridge. Visitors are encouraged to reflect both intellectually and emotionally on what it truly means to connect.

Zone 2

In Zone 2, visitors witness a pathbreaking performance held entirely within a 3D virtual space. Headlining the show is Perfume, Japan's iconic techno-pop trio. By wearing 3D glasses, visitors become fully immersed in a dynamic, multisensory performance that blends music, visuals and cutting-edge communications technology — an unforgettable experience.

The world-first live 3D transmission of

their performance was conducted on April 2. Since then, visitors have experienced a high-resolution recorded version.

Enabled by IOWN, every movement of Perfume's members — along with the vibrations of the stage, lighting effects and even spatial depth — was converted into data and transmitted in real time from a studio in the Osaka city of Suita to the pavilion in Yumeshima, where it was re-created in stunning detail.

The performance becomes truly immersive at the venue thanks to a floor embedded with vibrators, 360-degree visuals, surround sound and real-time motion and lighting data. These elements combine to create the thrilling sensation that Perfume is dancing right before your eyes.

Adding to the sensory experience is the Dynamic Curtain Display, a responsive fabric installation covering the exterior of the pavilion. Small cameras near the stage capture audience members' facial expressions, which are sent to the IOWN Photonic Disaggregated Computing system at NTT West's headquarters. There, the data is instantly analyzed by AI and the results are used to animate the curtain in real time. The effect is mesmerizing: The pavilion appears to pulse and shift in sync with the crowd's collective emotions.

This marks the world's first public use of photonics-electronics convergence devices, a core technology of IOWN's optical computing platform. Compared to conventional electronic systems, it achieves a dramatic leap in both performance and sustainability, consuming just one-eighth the power.

Zone 3

The final zone offers a deeply personalized experience. Upon entering, each visitor has their full body photographed and scanned. This data is then used to create a virtual avatar — using technology called Another Me — that appears on a large screen within the space.

These avatars transcend barriers of lan-



NTT's environmentally conscious pavilion's tent-like structure features three theaters suspended by carbon wires. NTT

guage and culture, interacting with one another in a shared virtual environment. Together, they perform a harmonious song of hope, conveying a powerful message about unity and connection in a digitally connected world.

This experience represents one of the first real-world applications of digital twin computing, a core concept envisioned by NTT. Within this hybrid space, where virtual and physical realities intersect, visitors can visualize and experience new forms of connection, both with themselves and with others. Zone 3 invites visitors to explore a future of communication where the boundaries between digital and physical realities dissolve — where interactions in virtual space feed back into the real world, enriching human experience and deepening our sense of connection.

Near the exit of Zone 3, an additional experience invites visitors to further reflect on the meaning of connection. In the installation, "The Touch of Life," the pavilion is connected via IOWN's All-Photonics Network to the Dynamic Equilibrium of Life Pavilion, located about a 10-minute walk away. Through the bidirectional transmission of visual, audio and biometric signals — such as heartbeats — visitors can experience a form of remote communication that conveys the very presence of life.

What is IOWN?

At the core of these immersive experiences is IOWN, an innovative communication infrastructure drawing global attention. Unlike conventional systems based on electrical signals, IOWN leverages optical technology to transmit enormous amounts of data at ultra-high speeds. It also offers exceptional energy efficiency.

NTT is aiming to reduce network-related power consumption by a factor of 100 by the 2030s compared to current levels, an ambitious target that could significantly lower environmental impacts and contribute to a more sustainable society. As the number of connected devices continues to rise dramatically, IOWN is seen as a critical solution to the world's escalating energy and bandwidth demands.

At its core, IOWN is built on three foundational technologies. The first is the All-Photonics Network, which by using light for all data transmission and processing can achieve dramatic gains in speed, capacity and efficiency. The second is digital twin computing, whose virtual replicas of people and systems can be used in simulations, forecasting and problem-solving. The third is the Cognitive Foundation, which orchestrates resources across the network to deliver information where and when needed, optimizing the system as a whole.

These technologies have the potential to transform a wide range of fields — including urban design, disaster response, health care,



In Zone2, Perfume performed the world's first live remote 3D show utilizing IOWN. NTT

education and more. Its first implementation phase, IOWN 1.0, began in 2023 and is expected to evolve into IOWN 4.0 by the 2030s, delivering even greater capabilities and societal impact.

IOWN goes beyond faster speeds and lower latency. It seeks to connect not only people and places, but also emotions and even physical sensations. As communication technology enters an era where it quietly — yet deeply and unmistakably — reaches the human heart, the NTT Pavilion, along with the expo as a whole, offers visitors a glimpse into the emerging possibilities.

Back in 1970, at the first Osaka expo, the predecessor of NTT — the Nippon Telegraph and Telephone Public Corp. — introduced the "wireless telephone" at its Telecommunication Pavilion, offering a bold vision of the future of communications.

Fifty-five years later, NTT returns to Osaka with a renewed mission. This time, the vision goes beyond connecting voices — it seeks to bridge hearts, minds and experiences. Powered by its cutting-edge IOWN technologies, NTT is once again opening the door to entirely new possibilities for how we connect.

The Sustainable Japan section highlights issues related to the environment and a sustainable society. For more information, scan the QR code.



Osaka Expo Times Gallery



The Romanian national choir, Madrigal, who toured Japan from Aug. 19 to 23, performs at the Romania Pavilion. ROMANIA PAVILION



The Spain Pavilion's large staircase mimics the sea, and a stage at its center hosts flamenco performances nearly every day. Both the performances and the staircase represent Spain's warm hospitality. SPAIN PAVILION



A performer showcases Canada's Indigenous hoop dancing. CANADA PAVILION



The Swiss Pavilion takes visitors on an immersive and interactive journey through collaborative innovation under the theme "From Heidi to High-Tech." FDPA, PRESENCE SWITZERLAND

World Cosplay Summit 2025: Costumes and camaraderie

Media partner

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Despite the scorching heat of August, cosplayers from all over Japan and the world gathered for the World Cosplay Summit 2025 dressed in their favorite costumes. Its various programs included a cosplay parade, a red-carpet ceremony, an exhibition and performances, drawing about 247,000 visitors between Aug. 1 and 3.

The event culminated in the World Cosplay Championship, held at the Aichi Arts Center's main hall on the last day. In this annual contest, teams of two cosplayers representing participating countries perform. This year, representatives from 42 countries, including five new ones, competed to be crowned the world's best cosplayers. The spectators, many also dressed in costumes, waved penlights and cheered on the competitors.

This year's grand prize and the Foreign Minister's Prize were awarded to the American team, We Need Disguises Cosplay, who dressed as Alcryst and Hortensia from the tactical role-playing game Fire Emblem Engage. The team will also be invited to the World Cosplay Championship 2026 as guest judges.

The second-place prize went to the French team, who played characters from the Japanese manga series Witch Hat Atelier, and third place went to the Brazilian team, who dressed up as characters from the horror game Biohazard Village. Eight special awards were presented



Kabuki actors Onoe Kikugoro VIII and son Onoe Kikunosuke VI were special judges at the World Cosplay Championship 2025. WCS 2025

for other outstanding aspects of their performances, such as action and the use of gimmicks and technology.

Characters being cosplayed in the competition must come from Japanese manga, anime, games or tokusatsu (Japanese television dramas using special effects), and costumes have to be handmade.

Costumes and performances were judged separately, each with a maximum score of 100 points. The costume judging was conducted in advance by event organizers. The winners were determined based on their total scores for costumes and performances.

In the performance judging, each team was given two and a half minutes to perform based on an original script or a scene from a work they had chosen. Every skit was met with loud applause from the audience, and offstage teams from different countries cheered for and praised each other.

In between performances, there were live online interactions connecting the audience with fans watching at viewing events in countries like Brazil, Costa Rica and the Czech Republic.

This performance judges included voice actor Toshio Furukawa, kabuki actors Onoe Kikugoro VIII and his son Onoe Kikunosuke VI, director and animator Park Sunghoo, journalist Tadashi Sudo, composer Akira Yamaoka, creator D Japanese and last year's champions, Mioshi and Mamemayo.

Kikugoro VIII shared his thoughts on the similarities between cosplay and kabuki in his comments, saying, "About 400 years ago, people known as kabuki-mono, who dressed in eccentric and stylish costumes, were expressing their spirit of 'loving oneself' through their inner inspiration and creativity, without looking askance at the world. This is the very same spirit that is shared with cosplay,



The United States team wins the WCS 2025 final at the Aichi Arts Center in Nagoya. WCS 2025

which is the act of giving form to one's own passion." He noted that the cosplayers from around the world who had gathered at the venue also cherish their inner selves, love themselves and breathe life into their expressions.

He also celebrated the spirit of accepting diversity shared by the participants and audience, comparing it to the Japanese concept of 8 million gods, which holds that gods dwell in all things in the universe. "The cosplay event is a celebration of peace, and I am honored to be part of it with all of you," he said.

Eleven-year-old Kikunosuke VI commented, "It is truly inspiring that all of these costumes are handcrafted, and I am immersed in the world of each team's performance."

The presence of two kabuki actors symbolized how the inspiring exchanges at the event transcended the boundaries between traditional arts and contemporary culture.

At the award ceremony, the American team erupted with joy and exclaimed: "We've been preparing for this moment for a long time! Dreams can come true if you just keep pushing." They also praised the other cosplayers in the competition, saying that they were all amazing and that cosplay is a wonderful culture, and expressed heartfelt thanks to their friends for their support.

Aiming to highlight cultural events, The Japan Times gave its support to this event by becoming a media sponsor.

