

Press Release

Telefónica and Würth Use Quantum Computing to Logistics Packaging to Reduce Transport Volume and Cardboard Consumption

- The pioneering initiative combines quantum computing and artificial intelligence to optimize logistics processes, improving packaging efficiency by 14%, cutting shipping box usage by around 3%, reducing transported volume by up to 7%, and lowering cardboard consumption by 6%.
- The project was developed at Telefónica's Javier Echenique Quantum Technologies Talent and Technology Center in Bilbao, a strategic hub and European benchmark for quantum technologies.

Madrid, July 23, 2026.- Telefónica and Würth España, the Spanish subsidiary of the Würth Group, the world leader in the distribution of fastening and assembly materials, have developed a pioneering innovation project at Würth's logistics center in Agoncillo (La Rioja), using quantum computing and advanced artificial intelligence (AI) algorithms to optimize logistics packaging.

The innovation initiative, developed in collaboration with TECNALIA—Spain's largest applied research and technological development center—and QCentroid, a leading startup in enterprise quantum computing adoption through its QuantumOps platform, represents one of the first industrial quantum computing use cases developed at Telefónica's Javier Echenique Quantum Technologies Talent and Technology Center in Bilbao. The center is a strategic innovation hub that positions Spain at the forefront of applied quantum technologies in Europe.

The project leverages the latest capabilities of quantum computing and artificial intelligence to optimize how products are packed into shipping boxes, reducing both the number and size of packages required for each order. This, in turn, lowers what is known as "on-road volume" while reducing Würth's per-order logistics costs.

Specifically, the pilot improved packaging efficiency across 14% of the more than 6,000 orders processed. This optimization resulted in a 3% reduction in the number of boxes used, which translated into an approximately 7% reduction in truck transport volume and more than a 6% decrease in cardboard consumption.

These results demonstrate the potential benefits that quantum computing can bring to logistics operations when combined with classical computing, making it possible to implement hybrid solutions such as the one developed in this project, with practical industrial applications available today.

Leonor Ostos, Director of Product and Service Development at Telefónica España, said: "This innovation project demonstrates that quantum computing, combined with artificial intelligence, can generate more and better services for customers, supported by the best network to access the most innovative technologies and address specific customer needs. As a telecommunications

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operator, we continue advancing our commitment to becoming the best gateway for citizens, businesses, and public administrations to access digital technologies.”

Begoña López, Chief Operations Officer of Würth España, S.A., added: “At Würth España, we view innovation as a real driver for improving the way we work and for continuing to advance in efficiency, sustainability, and competitiveness. Participating in this pioneering project has enabled us to explore, from a highly practical and operations-focused perspective, the potential of emerging technologies such as quantum computing to address future logistics challenges. Contributing our expertise and real-world data has been a valuable opportunity to help drive solutions with tangible applications in a demanding industrial environment.”

A Quantum Computing Benchmark with Leadership in Services and Innovation Pilots

With this project, Telefónica strengthens its position as one of the leading promoters of applied quantum computing, building on pioneering achievements in innovation and communications security.

Telefónica became the first operator to launch quantum-safe communications services, including secure interconnection between data centers, and the first operator in Europe to deploy an experimental metropolitan network for Quantum Key Distribution (QKD) technologies over its commercial network.

These services complement innovation pilots such as the one developed with Vithas, which enabled secure communications between two healthcare facilities in Madrid by protecting information through encryption based on a Quantum Key Distribution (QKD) system. In addition, Telefónica is currently deploying a pilot project for the Spanish National Police, securing communications between its facilities in El Escorial and Canillas through a combination of QKD technologies and Post-Quantum Cryptography (PQC).

Furthermore, in January 2026 Telefónica inaugurated the Javier Echenique Quantum Technologies Talent and Technology Center in Bilbao, a leading European centre for quantum technologies that is already developing use cases for strategic sectors including industry, energy, telecommunications, cybersecurity, logistics, banking, pharmaceuticals, and public administration. The center contributes to improving efficiency, security, and innovation capabilities across both businesses and institutions.

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