Mphasis and Copa Airlines Host Global Quantum Computing Challenge to Accelerate Innovation in Airline Operations

~Top-performing teams from IITs and the University of Calgary were invited to build quantum-based optimization solutions for real-world airline operations.

~Winners receive joint recognition and a cash reward from Copa Airlines and Mphasis

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Mphasis, (BSE: 526299; NSE: MPHASIS), a global AI-led, platform-driven technology solutions provider, in partnership with Copa Airlines, recently hosted a Quantum Computing Challenge, an international innovation contest. The challenge brought together teams from various Indian Institutes of Technology (IITs) in India and the University of Calgary and the University of Lethbridge in Canada to solve a real-world airline optimization problem using next-generation quantum computing.

The challenge focused on disruption management by addressing the passenger re-accommodation problem, a critical airline process involving reassignment of passengers to alternate flights during schedule disruptions due to demand shift, seasonal routes, or cancellations. Traditionally solved through well-established mathematical optimization techniques on high-performance classical computing system, the problem was reimagined and resolved in this challenge using quantum computing with the focus on improving the speed and accuracy at scale.

Mphasis' Airlines Vertical and NEXT Labs (company's R&D and innovation arm) collaborated with Copa Airlines, to define the problem, identify data requirements, establish infrastructure through partner ecosystem, and define success and the evaluation criteria. Based on benchmarks shared by the Airlines, the objective was to improve the passenger re-accommodation rate, without impacting the solution runtime.

The competition was conducted in two phases. Phase -1 included 22 Indian Institutes of Technology (IIT) teams evaluated jointly by Mphasis experts and IIT-Madras faculty, from which six teams were selected. In Phase 2, these six teams competed with three teams from the University of Calgary and the University of Lethbridge using real Copa Airlines data, and quantum infrastructure provided by Classiq, Multiverse computing and qBraid.

Participants developed end-to-end solution pipeline, including:

- Identification of impacted flight segments and passengers
- Passenger scoring and prioritization based on Customer Value Management (CVM) data
- Ranking of alternate flight options
- Optimal reassignment of passengers using quantum and classical optimization techniques
- Benchmarking and performance evaluation of the proposed solutions

Mphasis, with IIT-Madras and Quantum City – the quantum ecosystem developer in Calgary, Alberta (formed through a strategic partnership with the Government of Alberta, and Mphasis), shortlisted three solutions for presentation to Copa Airlines leadership. The winning teams will receive a cash prize and a joint certificate from Copa Airlines and Mphasis.

"The Quantum Computing Challenge reflects Mphasis' commitment to applied innovation and advancements in quantum technologies. As industries move from experimenting with quantum computing to deploying it for real-world impact, its maturity and readiness for enterprise-scale applications are becoming increasingly evident. This challenge bridges the gap between research and implementation by connecting academic talent with real business problems, showcasing how

quantum optimization can improve efficiency and decision-making in airline operations," said **Srikumar Ramanathan, Chief Solutions Officer, Mphasis.**

"The Quantum Computing Challenge reflects our commitment to exploring transformative technologies that can redefine the future of airline operations. The innovative solutions presented by participants worldwide was truly inspiring, demonstrating how quantum computing, combined with diverse talent and fresh perspectives, can help build more intelligent, adaptive, and connected aviation ecosystems for the years ahead," said **Julio Toro, Chief Information Officer, Copa Airlines.**

Mphasis continues to advance quantum computing to solve complex business problems, by driving research, talent development, and the creation of advanced quantum solutions for real-world enterprise challenges. This multi-pronged approach reinforces Mphasis' leadership in bridging academia, industry, and technology to unlock the full potential of quantum computing for their global clients.

Recently, the company also launched two quantum-powered offerings, QOptiDecision™ for quantum enhanced optimization that leverages hybrid quantum-classical algorithms to drive optimization and transformation across industries and qCryptsec™ for quantum-safe cybersecurity.

About Mphasis

At Mphasis, engineering has been in our DNA since inception.
Mphasis is an AI-led, platform-driven company with human-in-the-loop intelligence, helping global enterprises modernize, infuse AI, and scale with agility. The Mphasis.ai unit and Mphasis AI-powered 'Tribes' are focused on client outcomes and embed artificial intelligence and autonomy into every layer of the enterprise technology and process stack. Mphasis built NeoIP™, a breakthrough AI platform that orchestrates a powerful pack of AI solutions and platforms to deliver impactful outcomes across the enterprise IT value chain, as we believe *'AI Without Intelligence Is Artificial™'*. Mphasis NeoIP™ is powered by the Ontosphere, a dynamic and ever-evolving knowledge base, delivering continuous and constant innovation through perpetual intelligent engineering—driving end-to-end enterprise transformation.
At the heart of our approach is customer-centricity—reflected in our proprietary Front2Back™ transformation framework, which uses the exponential power of cloud and cognitive to deliver hyper-personalized digital experiences ($C=X2C^{2}_{TM}=1$) and build strong relationships with marquee clients. Our Service Transformation solutions enable enterprises to pivot from legacy systems and operations to secure, adaptive, cloud-first operating models with minimal disruption. Continuous investments in platforms, such as the Neo series, enable enterprises to stay efficient, relevant, and ahead in a dynamic AI-first world. Mphasis is a Hi-Tech, Hi-Touch, Hi-Trust company, rooted in a learning and growth culture. Click here to know more. (BSE: 526299; NSE: MPHASIS)

About Copa Airlines

Copa Airlines, a subsidiary of Copa Holdings, is a leading passenger and cargo airline in Latin America. Throughout nearly 80 years of operations, it has established the Hub of the Americas®, located in Panama City, as the continent's premier connecting hub. Copa Airlines operates one of the youngest and most modern fleets in the industry, consisting of Boeing 737-800 NG and Boeing 737 MAX aircraft, serving destinations across North, Central, and South America and the Caribbean. The airline maintains an on-time performance rate of approximately 90%, consistently ranking among the best in the global airline industry.
Copa Airlines is a member of Star Alliance, the world's most comprehensive global airline network, and offers ConnectMiles, its frequent flyer program, through which members can earn and redeem miles on more than 25 airlines worldwide.

About Quantum City

Quantum City is building an ecosystem for quantum science and technology in Alberta bringing together researchers and developers, industry and adopters of quantum technology and services.
The University of Calgary has formed a strategic partnership with the Government of Alberta, and Mphasis, its first industry partner to create Quantum City. Quantum City's mandate is to establish quantum-focused fabrication infrastructure, new talent development programs and adoption pathways to support the development of a vibrant economic and scientific hub based in Calgary. These combined assets will create a unique, and once-in-a-generation opportunity to position Alberta as a national and international jurisdiction in the new quantum economy.

ABOUT IIT MADRAS

Indian Institute of Technology Madras (IITM) was established in 1959 by the Government of India as an 'Institute of National Importance.' The activities of the Institute in various fields of Science and Technology are carried out in 18 academic departments and several advanced interdisciplinary research academic centres. The Institute offers undergraduate and postgraduate programmes leading to B.Tech., M.Sc., M.B.A., M.Tech., M.S., and Ph.D. degrees in a variety of specialisations. IITM is a residential institute with more than 650 faculty and 10,000 students. Students from 18 countries are enrolled here. IITM fosters an active entrepreneurial culture with strong curricular support and through the IITM Incubation Cell.

Recognized as an Institution of Eminence (IoE) in 2019, IITM has been ranked No.1 in the 'Overall' Category for seven consecutive years in India Ranking 2025 released by National Institutional Ranking Framework, Ministry of Education, Govt. of India. The Institute has also been ranked No.1 in the 'Engineering Institutions' category in the same Rankings for 10 consecutive years – from 2016 to 2025.

In addition, IIT Madras also secured first rank in the category of 'Sustainability Development Goals' (SDG), which was introduced in 2025, and also secured the #1 rank in the 'Innovations' category (previously known as Atal Ranking of Institutions on Innovation Achievements), improving upon its position of #2 in the same category the preceding year.

In 2023, IIT Madras became the first IIT to establish an international Campus in Zanzibar, Tanzania, called 'IIT Madras Zanzibar.

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