



OCBC BANK AND NTU SINGAPORE TO EMBARK ON A S\$5 MILLION RESEARCH COLLABORATION

The five-year research collaboration will deep dive into developing innovative technological solutions in sustainability, data privacy and cyber security

Singapore, 10 November 2022 – OCBC Bank and Nanyang Technological University Singapore (NTU Singapore) today announced that they have embarked on a S\$5 million research collaboration over the next five years, to develop innovative technological solutions in three key areas – sustainability, data privacy and cyber security.

Deputy Prime Minister, Coordinating Minister for Economic Policies, and Chairman of the National Research Foundation, Mr Heng Swee Keat, witnessed the signing of the research collaboration agreement at NTU's Strategic Centre for Research in Privacy-Preserving Technologies & Systems (SCRIPTS).

Leading the research is NTU Associate Vice President (Strategy and Partnerships) Professor Lam Kwok Yan, who is also Director of SCRIPTS and the Executive Director of National Centre for Research in Digital Trust. NTU's SCRIPTS specialises in developing privacy-preserving technologies, which are essential prerequisites in ensuring data protection and data privacy.

NTU's research partnership with OCBC is also in line with NTU2025, the University's five-year strategic plan that aims to address humanity's grand challenges, such as the impact of technology on humanity and mitigating our impact on the environment.

1. Sustainability

The research will focus on the development of technological solutions to drive the greening of data centres for a start, employing OCBC's data centre as a use case. These solutions will leverage technologies such as artificial intelligence, machine learning and Internet of Things (IoT) to enable these facilities to be more energy efficient. They will help boost Singapore Green Plan's as well as the bank's decarbonisation efforts.

Data centres are energy-intensive assets, and according to the South-east Asia's Green Economy report, they will account for 12 per cent of Singapore's energy consumption by 2030. While OCBC's data centre has obtained the BCA-IMDA Green Mark Platinum Award – the highest standard attainable for energy-saving buildings – in recognition of its sustainable features, it still contributes 40 per cent of the Bank's carbon emissions in Singapore. Through this research, OCBC Bank aims to reduce the energy consumption of the data centre and lower its carbon footprint.

2. Data Privacy

Data and digital technologies have enabled Financial Institutions (FIs) to drive personalisation for customers, but robust risk management is essential. With this in mind, the research collaboration will also focus on data privacy, utilising OCBC's information, such as voice recordings, as the content of the study. Specifically, the collaboration seeks to harness the potential of homomorphic encryption – a leading privacy enhancing technology more commonly used by medical institutions for DNA testing – in financial services. Through the use of this privacy enhancing technology, FIs will be able to perform encrypted operations such as searches and analytics without exposing the sensitive content of the operations.

Given that the Bank processes more than 35 billion transactions annually, the use of this homomorphic encryption will facilitate the processing of highly personalised insights and customised experiences for its customers while the findings from the research will help the Bank sharpen its privacy framework and enhance the protection of our customers' data.

3. Cyber Security

Cyber security has become more salient given the increasingly sophisticated threats in the digital age. A 2021 study by cyber security company Imperva showed that the financial services sector was the most targeted sector in Singapore, accounting for more than half of the cyber-attacks last year. Strengthening the cyber resilience of the financial services industry is essential to mitigate the growing risk of cyber threats such as deepfake attacks, and the research will bolster OCBC's security measures while enabling customers to continue to bank online securely.

Mr Praveen Raina, Head of Group Operations & Technology, OCBC Bank, said: "Partnership between industry and academia is instrumental to advancing research. The exchange of insights and information with academia has long been valued by OCBC and the research collaboration with NTU is a partnership that we want to deepen. Financial institutions can offer industry knowledge and use cases that research institutions can draw on to conduct analysis and studies to assess the real-world applicability of research. Through this partnership, I am looking forward to new solutions and capabilities that we can use to augment our digital infrastructure and continuously strengthen customers' trust in us."

NTU Senior Vice President (Research) Professor Lam Khin Yong said: "The research collaboration between NTU and OCBC in data privacy and digital trust is aligned with a national priority to develop a privacy-aware Smart Nation. The importance of collaboration in fintech areas with OCBC allows the University to bring our strong interdisciplinary approaches in pedagogy and research to address some of the most pressing and complex challenges facing the fintech industry. One of the key thrusts in the collaboration is on privacy-preserving technologies, which are computing techniques used to preserve individual's privacy while allowing maximum value and insight to be extracted from available data."

About OCBC Bank

OCBC Bank is the longest established Singapore bank, formed in 1932 from the merger of three local banks, the oldest of which was founded in 1912. It is now the second largest financial services group in Southeast Asia by assets and one of the world's most highly-rated banks, with an Aa1 rating from Moody's. Recognised for its financial strength and stability, OCBC Bank is consistently ranked among the World's Top 50 Safest Banks by Global Finance and has been named Best Managed Bank in Singapore by The Asian Banker.

OCBC Bank and its subsidiaries offer a broad array of commercial banking, specialist financial and wealth management services, ranging from consumer, corporate, investment, private and transaction banking to treasury, insurance, asset management and stockbroking services.

OCBC Bank's key markets are Singapore, Malaysia, Indonesia and Greater China. It has more than 420 branches and representative offices in 19 countries and regions. These include over 190 branches and offices in Indonesia under subsidiary Bank OCBC NISP, and over 60 branches and offices in Mainland China, Hong Kong SAR and Macau SAR under OCBC Wing Hang.

OCBC Bank's private banking services are provided by its wholly-owned subsidiary Bank of Singapore, which operates on a unique open-architecture product platform to source for the best-in-class products to meet its clients' goals.

OCBC Bank's insurance subsidiary, Great Eastern Holdings, is the oldest and most established life insurance group in Singapore and Malaysia. Its asset management subsidiary, Lion Global Investors, is one of the largest private sector asset management companies in Southeast Asia.

For more information, please visit www.ocbc.com.

About Nanyang Technological University, Singapore

A research-intensive public university, Nanyang Technological University, Singapore (NTU Singapore) has 33,000 undergraduate and postgraduate

students in the Engineering, Business, Science, Medicine, Humanities, Arts, & Social Sciences, and Graduate colleges.

NTU is also home to world-renowned autonomous institutes – the National Institute of Education, S Rajaratnam School of International Studies, Earth Observatory of Singapore, and Singapore Centre for Environmental Life Sciences Engineering – and various leading research centres such as the Nanyang Environment & Water Research Institute (NEWRI) and Energy Research Institute @ NTU (ERI@N).

Under the NTU Smart Campus vision, the University harnesses the power of digital technology and tech-enabled solutions to support better learning and living experiences, the discovery of new knowledge, and the sustainability of resources.

Ranked amongst the world's top universities, the University's main campus is also frequently listed among the world's most beautiful. Known for its sustainability, over 95% of its building projects are certified Green Mark Platinum. Apart from its main campus, NTU also has a medical campus in Novena, Singapore's healthcare district.

For more information, visit www.ntu.edu.sg.

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