17th IPS-Nathan Lecture Series: Lecture II "Reinventing Finance in the Digital Age" by Mr Piyush Gupta

In his second IPS-Nathan Lecture, Mr Piyush Gupta examined how digital technologies and new players are reshaping finance, and how Singapore has sought to manage the resulting risks while sustaining innovation. Building on his first lecture on stability, trust and innovation, he argued that the same balancing act now underpins Singapore's ambition to be a leading digital financial centre in an era of rapid change.

Digitalisation and the changing financial landscape

Mr Gupta began by situating Singapore in the global digital finance landscape. Recent indices such as Findexable's Global Fintech Index and the Global Financial Centres Index had ranked Singapore among the world's foremost hubs for both traditional finance and fintech activity.

Over the past decade, however, it was not only Singapore's standing that shifted, but also the players that were participating in the system, how money was moving, and what kinds of risks regulators had to confront.

How money now moves in Singapore

He highlighted how payment patterns in Singapore have changed markedly. The adoption of the Fast and Secure Transfers (FAST) system has transformed domestic payments: transaction values rose from about $37 billion in 2015 to $662 billion in 2024, an increase of almost 18 times.

Card payments grew by 85 per cent over the same period to $149 billion, while cheque usage fell by around half and ATM withdrawals declined by 16 per cent.

Behind these shifts are broad behavioural changes. Mr Gupta noted that more than 90 per cent of residents aged 20 to 75 are now registered for PayNow, compared with about 65 per cent in 2019, and by 2022 over 90 per cent of merchants accepted unified QR payments through SGQR.

Money increasingly moves in "bits and bytes" rather than as cash or paper instruments, he said, changing the speed and convenience of financial transactions.

New players, platforms and shared infrastructure

Mr Gupta then described how the mix of players in the financial sector has broadened. Singapore is now home to more than 1,600 fintech firms, up from only a few hundred in the mid-2010s, offering specialised services in payments, lending, wealth management and insurance. Digital banks licensed by the Monetary Authority of Singapore (MAS), alongside digital offerings from incumbent banks, have expanded options for both mass-market and underserved customer segments. Technology platforms and "embedded finance" have further blurred boundaries between financial and non-financial firms. Payment and credit solutions are integrated into ride-hailing, e-commerce and other consumer platforms, while ecosystem players in areas such as small-business services bundle accounting, payroll and payments for firms that might previously have relied on manual processes.

Mr Gupta stressed that these developments have been enabled by deliberate public–private collaboration. MAS created its FinTech and Innovation Group in 2015 and, together with the other government agencies, set up a FinTech Office the following year to coordinate development efforts. MAS also launched a regulatory sandbox to allow experimentation under safeguards and subsequently consolidated payment rules under a single framework.

At the same time, events such as the Singapore FinTech Festival have positioned Singapore as a convening point for global industry dialogue.

Equally important has been the building of common modes of electronic payment. FAST, PayNow and SGQR now connect banks, e-wallets and merchants through interoperable payment systems, while cross-border linkages with countries such as India and Thailand have lowered the cost of regional transfers. Data infrastructures such as the Singapore Financial Data Exchange (SGFinDex) allow individuals, authorised through Singpass, to view their financial information across government agencies, banks and insurers, while the Singapore Trade Data Exchange (SGTraDex) improves the sharing of supply-chain data.

Benefits for consumers and businesses

These developments, Mr Gupta noted, have brought tangible benefits. Consumers enjoy greater choice across a wider range of providers and products, from low-cost remittance and investment platforms to new forms of micro-insurance linked to everyday activities. Banks and fintechs are also using artificial intelligence (AI) and data analytics to personalise services and manage risk.

For businesses, particularly small and medium-sized enterprises, digital platforms have made it easier to access credit, manage cash flow and integrate payments into their operations. Cross-border QR and real-time payment linkages have lowered the cost of international transactions, reduced costs for consumers and helped small merchants increase earnings.

Managing new risks arising from digitalisation

Mr Gupta emphasised that digitalisation has also generated new risks and shifted the nature of existing ones. The first set of concerns relates to financial inclusion.

Research suggests that the cost of holding and using cash can amount to almost 2 per cent of GDP, and paper-based payments introduce delays and hidden costs, so there is a strong economic case for digital payments. Yet, rapid digitalisation risks excluding the elderly and less tech-savvy. In Singapore, however, the proportion of seniors using online payments more than doubled from 2018 to 2022, supported by targeted initiatives and collaboration between MAS, banks and community organisations.

The second area relates to scams and fraud. While digital channels have improved convenience, they have also been exploited by increasingly sophisticated scam syndicates.

Mr Gupta characterised scam prevention as a “whole-of-society” challenge analogous to the transition from horse-drawn carriages to motor cars, requiring not only safer products and infrastructure but also new habits among users.

Third, Mr Gupta pointed out the difficulty in balancing convenience and privacy with the adoption of AI technologies. While there are undeniable benefits to the usage of customer data in terms of convenience and personalisation of services, over-adoption of data can contribute to discrimination and endanger the fundamental premise of industries that socialise risks, such as insurance.

Fourth, digitalisation has changed liquidity risk. In a world of instant communications and real-time transfers, fear can spread much faster than before. Mr Gupta cited the collapse of Silicon Valley Bank, described as the first “Twitter-fuelled” bank run, in which warnings on social media rapidly triggered massive withdrawals. It illustrates how quickly liquidity can evaporate when funds move electronically rather than through queues at bank branches.

Finally, greater reliance on digital infrastructure has increased cyber and operational risks. Drawing on IMF data, Mr Gupta noted that nearly one-fifth of reported cyber incidents in the past two decades have affected the global financial sector, causing around US$12 billion in direct losses.

State-sponsored cyberattacks, including those linked to advanced persistent threat groups such as UNC3886, add to the threat. The shift towards microservice architectures and extensive use of third-party vendors has introduced new failure points.

Conclusion

Mr Gupta concluded that digitalisation has brought about a diverse ecosystem of fintechs, big technology firms, incumbent banks and non-financial players, supported by shared public–private infrastructure, establishing Singapore as one of the most digitalised financial systems in the world.

At the same time, new operational, liquidity and crime-related risks have emerged, alongside the danger of excluding those who struggle to adapt to digital tools. The task for Singapore, he argued, is to continue to strike a calibrated balance between innovation and trust, so that the benefits of digital finance can be realised without undermining stability or inclusion.

Question-and-Answer Session

The question-and-answer segment was moderated by Mr Vikram Khanna, Economics Commentator at *The Straits Times*.

Mr Khanna asked if the proliferation of fintechs and other non-bank players could create systemic risks, particularly if they were to fail. Mr Gupta replied that the first line of defence is adequate capital and liquidity. In Singapore, he noted, MAS has required new entrants, including digital banks and major payment operators, to meet meaningful capital and liquidity thresholds, despite initial resistance from some firms that favoured lighter regimes seen elsewhere. This approach aims to prevent distress in fast-growing non-bank segments from spilling over into the regulated banking system.

An audience member then asked about projections that Singapore's GDP could double and stock indices could reach much higher levels by 2040, and whether such targets were realistic. Mr Gupta responded that the mathematics of compounding over 15 years make such outcomes plausible if current growth rates are sustained. The more important question, he suggested, is whether Singapore can continue to innovate, upgrade skills and attract talent in a more contested global environment, while ensuring that regulation remains forward-looking, rather than solely focused on preventing a repeat of past crises.

Another question was whether protection against scams and cyber incidents should be left to the private sector, such as insurance firms. Mr Gupta observed that while some cyber insurance products exist, they tend to offer limited coverage because it is difficult for insurers to model and price extreme, system-wide losses. In his view, certain digital risks may need to be partially socialised at the national level, much as deposit insurance and universal health insurance are underpinned by state-led frameworks financed by levies from industry.

An audience member asked about the implications of AI for jobs in banks, and how morale could be maintained when staff fear being replaced by technology. Mr Gupta drew on DBS' experience, noting that digitalisation has automated many routine tasks but has also enabled job redesign and the creation of new roles. Generative AI, he acknowledged, is qualitatively different because it can perform parts of white-collar work involving reading, analysis and drafting. However, he remained cautiously optimistic that, as with past technological shifts,

new categories of work would surface. He advised students and professionals to cultivate broad, integrative skills — combining technical literacy with understanding of philosophy, psychology and human behaviour — arguing that “generalists” who can frame problems, interpret AI outputs and work with others will be especially valuable.

A question was also posed on whether the rise of stablecoins and digital assets could threaten the role of the US dollar as the dominant reserve currency. Mr Gupta replied that reserve currency status tends to be highly “sticky”. The US dollar continues to be used for a large majority of global trade, and most stablecoins are in fact backed by dollar assets, which means that, so far, digital tokens have tended to reinforce rather than weaken the dollar’s position. Any shift in the international monetary order, he suggested, would be gradual rather than abrupt, even as countries diversify their reserves and experiment with alternative payment arrangements.