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America can learn from India's digital drive

Aadhaar has enabled India to leapfrog generations of financial technology

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LOOKING from Silicon Valley upon the progress that India has made in building a digital infrastructure, I am in awe. The US tech industry fancies itself as the global leader in innovation, yet India has leapt far ahead of it. Silicon Valley's tech investors hype complex technologies, such as Bitcoin and blockchain. But India, with simple and practical innovations and massive grunt work, has built a digital infrastructure that will soon process billion more transactions than these do.

India is about to skip two generations of financial technologies and build something as monumental as China's Great Wall and America's interstate highways.

Though few people in the West know of Aadhaar, it has been the largest and most successful IT project in the world. There was widespread scepticism that a billion people could be provided with a verifiable digital identity, yet it has occurred, in a short span of six years. Hundreds of millions of people who were doomed to live in the shadows of the informal economy can now participate as equals in the global economy. Thanks to Jan-Dhan Yojana, they also have bank accounts; which already have ₹69,000 crore in deposits.

The reason investors are pouring billions of dollars into technologies, such as Bitcoin, is that they provide a secure way of linking a person to and recording a transaction. But Bitcoin requires massive, wasteful, computing resources to do what is called mining: transactions' mathematical verification. And, this complex computing infrastructure needs constant improvement as it hits transaction limits.

The simple design of India's digital payments infrastructure, Unified Payment Interface (UPI), allows banks to transfer money directly to each other based on an Aadhaar number or mobile-phone number plus pin. Yes, this doesn't have the anonymity of Bitcoin, but I would argue that anonymity is mainly for money laundering and tax evasion—which needs to be eliminated. There is almost no overhead in UPI, and transactions happen within seconds rather than the 10 minutes that Bitcoin takes.

In the US, we pay an indirect tax of 2–3% on consumer transactions because of the use of credit cards. Companies such as Visa, Mastercard, and American Express don't even manage the money or provide banking services; all they do is act as an intermediary between banks. The merchant has the responsibility of verifying the identity of a customer. With UPI, India doesn't need credit cards or middlemen, it can build the next generation of finance on its own.

PM has taken a lot of fire for demonetisation. But it was a bold move and one that will produce tremendous long-term benefit—because it will accelerate the push to digital currency

The instant and non-repudiable proof of identity that Aadhaar's know your customer technology, e-KYC, provides, gives India a big advantage. Most people in the US have drivers licenses and social security numbers. But these are not verifiable with biometrics or mobile numbers, so complex verification technologies need to be built into every financial system. Indian entrepreneurs building applications don't need to worry about all this.

Going beyond money, India Stack provides a digital locker through which one can store and share personal data such as addresses, medical records, and employment records. With this, the government is providing a public service that is the digital equivalent of roads and electricity. I don't know of any other country that has anything comparable; India will soon have the digital equivalent of super-highways.

There are all sorts of benefits. For example, the opening of a mobile-phone account is a lengthy process everywhere, because telecom carriers must verify the user's identity and credit history. With India Stack, all it requires is a thumbprint or retina scan and permission to share digital documents. A typical villager, at present, has no chance of getting a small-business loan, because he or she does not have a credit history or verifiable credentials. With India Stack, he or she can share digital copies of bank statements and utility-bill payments, and life-insurance policies and loans can receive instantaneous approval.

Nandan Nilekani is right when he says that these advances "represent the biggest advance globally in public digital infrastructure since the Internet and GPS". In an email to me, he predicted that they will "lead to a leapfrogging on many fronts, including a digital financial platform for a billion people which does not require cards, PoS machines or ATMs, but will be entirely driven by what is in your hand—your finger and your phone".

Prime minister Modi has taken a lot of fire for demonetisation. This is understandable, given the hardships and the disruption to the economy that it created. But it was a bold move and one that will produce tremendous long-term benefit—because it will accelerate the push to digital currency. India has the opportunity to enter an age of transparency and beat the forefront of digital technologies.

Nobel Prize–winning economist Joseph Stiglitz said in Davos that the US should follow Modi's lead in phasing-out currency and moving toward a digital economy, because it would have "benefits that outweigh the cost". Speaking of the inequity and corruption that is becoming an issue in the US and all over the world, he said "I believe very strongly that countries like the United States could and should move to a digital currency so that you would have the ability to trace this kind of corruption".

Yes, India is ahead and America can learn from it.

The author is distinguished fellow, Carnegie Mellon University Engineering at Silicon Valley. Views are personal