



Dr Vivian Balakrishnan,
Minister for Foreign
Affairs and Minister-
in-Charge of the Smart
Nation Initiative.



INTERVIEW

Vivian Balakrishnan

A Smart Nation for the People

Dr **Vivian Balakrishnan** is Minister for Foreign Affairs and Minister-in-Charge of the Smart Nation Initiative. He tells CLC's Dr Limin Hee about the progress of Singapore's Smart Nation Initiative, and how people are at the heart of this transformation to harness digital technologies and become a more liveable and economically competitive city.

What are the priorities driving Singapore's journey towards a Smart Nation?

Smart Nation is really about our people. It's not about technology for technology's sake. It's about focusing on jobs, quality of life and the society. People shouldn't be reduced to anonymous digits in a highly structured, concrete jungle.

It has to be a whole of society endeavour, not just a government effort. But the government has a primary responsibility for certain things. First, digital infrastructure. This means making sure that mobile and broadband connectivity is pervasive with 100% coverage.

The next aspect is skills. We know jobs are being disrupted and there is anxiety about future job prospects. The key

solution is to make sure people have the relevant skills even as we restructure our economy. The SkillsFuture programme gives everyone an opportunity to retool, reskill, be more productive in our current jobs, and prepare us for the next job, because it is highly likely that in the future all of us will have two or three jobs in our lifetimes. The Committee on the Future Economy has at least 23 Industrial Transformation Maps to prepare enterprises and people for the next phase of development.

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The third is research and development. Governments need to work more closely with research institutions, universities and the private sector. So while the Singapore government is stepping up our investments in research—we’ve set aside S\$19 billion across the next five years—what we want is to catalyse even more research and development in the private sector.

The fourth area is that governments have to set standards. I believe in open data, open source and open standards. The current digital ecosystem is characterised by a few big companies, each trying to build a wall to guard its own ecosystem. Governments have a responsibility to define the rules, standards, and policies so that people will have choice and that the user content that is generated accrues value to the people rather than to the digital oligarchy. There should be an opportunity for whole-of-society collaboration to deal with the challenges of the future.

In Singapore, we have an open data website, Data.gov.sg. The prime minister has been pushing us to make data available to the public as much as possible. This engenders trust. We don’t just publish data; we also make it machine-readable. The objective is to create an ecosystem where the private sector comes in, meshes government data and their own sources, and generates new, innovative services that meet the real needs of people, enhance the quality of life and create opportunities.

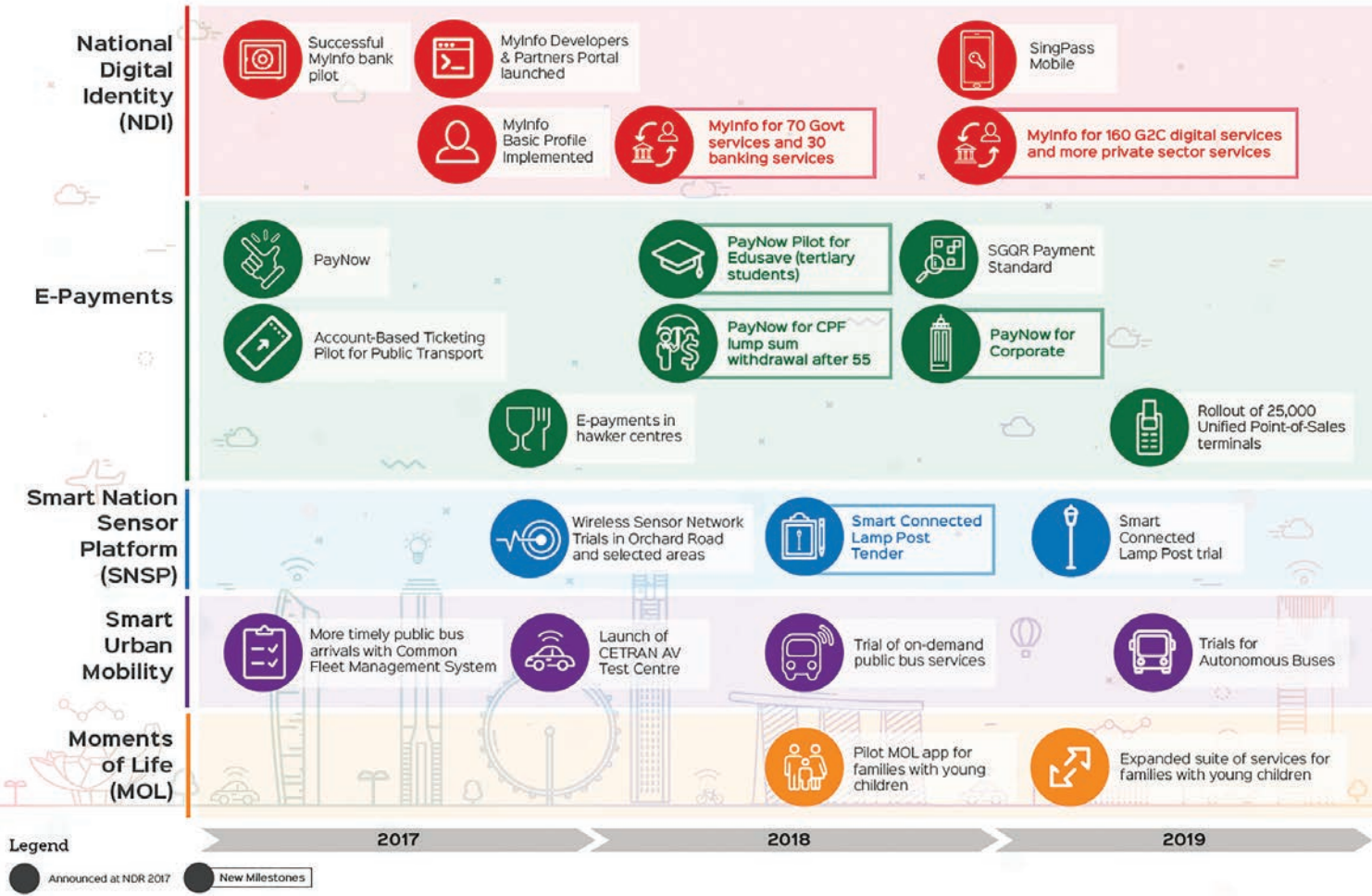
How much progress have we made in building a Smart Nation?

There’s a lot of ongoing work on what we call national platforms. One is on e-payments. The FAST (Fast And Secure Transfers) and PayNow systems allow me to transfer money to you instantly and with zero transaction cost using just your phone number. This was rolled out in 2017, and we are working on making the system available to companies as well as interoperable across borders.

In the next couple of months, we will have SingPass Mobile, which is a digital identity with not just a password and two-factor authentication, but also biometric authentication and PKI (Public Key Infrastructure) to enhance security and encryption. It will open up many possibilities in the future, even for digital contracts.

Achieving a revolution in both payments and identity will bring us to a situation where we can have cashless, paperless and presence-less transactions. This will save money for customers, reduce barriers to entry and transaction costs, and improve margins for businesses.

UPDATED MILESTONES FOR STRATEGIC NATIONAL PROJECTS





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We are also rolling out a national sensor platform. How do we maximise the utility from the huge amount of data on congestion, air and water quality, and videos, to make life safer and more convenient? We are exploring making every lamp post a “smart lamp post”, as part of a plug-and-play infrastructure with sensors and other smart devices, which will provide services to people. The data is anonymised to protect people’s privacy. At the same time, it will improve security and make it easier for the police or security agencies to respond quickly and effectively.

That is a lot to look forward to, but what about those who are not fluent with technology? How can our society continue to be inclusive even as we become smarter?

Firstly, there has to be 100% access to digital technology. This is where governments need to make sure that everyone has access to devices. Having said that, it’s not just about the device. The key thing is design—it needs to be intuitive to humans.



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“There has to be the human touch and an effort to reach out to people to give them confidence to use new technology.”

There has to be the human touch and an effort to reach out to people to give them confidence to use new technology. Everyone should have access to a digital concierge, at a community centre, school or library, which is someone who’ll say, “How can I help you, this is how you do it, let me hold your hand, literally, and help you”.

Another dimension that is especially applicable to us, and which makes us relevant to the rest of the world, is multilingualism. We have to make sure that all essential services work through all the official languages. As the government, we must be prepared to invest



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in this so there will be no linguistic divide. A multilingual interface sends the signal that we are not going to allow any group to be left behind. Being able to roll out services in a multilingual way also makes us relevant to Southeast Asia and beyond.

Do you foresee changes in city planning, with the onset of new disruptive technologies like autonomous vehicles?

Fifty-two years ago, Mr Lee Kuan Yew [Singapore's founding Prime Minister] said we did not want to be a concrete jungle even though we were going to be a metropolis in Southeast Asia. That paradigm of incorporating greenery, conserving nature and protecting our environment was ahead of his time.

Fast forward to today, it doesn't matter how high-rise or how futuristic the city is—it has to work for human beings. I think it still has to be green and sustainable. Things need to be within walkable, convenient range. Schools, libraries, healthcare facilities, social amenities and our workplaces have to be nearby.

To me, the real value of autonomous vehicles is to make public transport more convenient, cost effective and efficient. But we don't want a city where we're all transported in pods and deposited in our destinations. There has to be walking, running, jogging, cycling. It doesn't matter what your preference is, but the human body still needs the challenge of physical activity. There needs to be sufficient social interaction. In the end, it's still about relating to people and focusing on them.

- 01 Participant learning how to transact digitally with her mobile phone at IMDA's e-Payment Learning Journey.
- 02 In Code@SG movement, students learn coding and develop computational thinking at an early age through various enrichment programmes.
- 03 Student volunteers teach senior citizens IT skills through Intergenerational IT Bootcamp, which aims to bridge the digital divide and foster stronger bonds.

Building an Eco-Friendly Environment



1
Enhanced Existing Cycling & Pedestrian Network



2
Secured Bicycle Parking Facilities



3
Skyrise Greenery



4
Vertical Greenery

1

2

3

5

9

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Ensuring Resource-Efficient Estates



5
Pneumatic Waste Conveyance System (PWCS)



6
Solar Photovoltaic System



7
Energy Efficient LED Lightings & Outdoor LED Street Lightings with Sensing Control



Illustrations are artists' impressions only. Actual developments may differ.



Creating Cohesive and Responsible Communities



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- 01 Singapore's HDB towns are planned in close proximity to service amenities and adequate greenery, a vision put forth even in the early days of development, to ensure a highly liveable environment.
- 02 Community enjoying their morning at Car-Free Sunday SG, an initiative by the Urban Redevelopment Authority and partner agencies. Roads in the Civic District, Central Business District and Telok Ayer Conservation Area are closed for participants to enjoy public spaces and events, fostering social interaction and community spirit.

“In a paradoxical way, you need both high tech and high art.”

In light of smart technology, how do you envisage the future of work?

I have no doubt that work will be completely disrupted by technology. It has happened before. In 1870, about 80% of American jobs depended on agriculture. Today, it is less than 2%. The moment steam engines were invented, human labour and animal labour became commoditised, because the machines could work tirelessly at things which, in the past, only human and animal muscle could.

In this age of artificial intelligence, big data and pervasive sensors, many routine tasks which can be automated are at risk. What is left for human beings and human ingenuity? My sense is that jobs that depend on high touch, high art and creativity will require human beings.

In this digital age when everyone can produce movies and webpages, it's not so much about the technical details of whether you can write HTML, or understand the difference between RAW and TIFF images. The machines and post-production tools will change. But you need the artist with that eye for composition and beauty; you need the designer who can create a website that is compelling, and sends across emotionally resonant messages. In a paradoxical way, you need both high tech and high art.

In the area of medicine, there's no question that robotics can improve the accuracy of diagnosis and safety of medical procedures. But medicine is still a high touch field. You need to see the patient, understand the patient, have empathy and build trust with the patient. The doctor's job will be transformed, but human relations will still be needed.

“It goes far beyond just technology and cities. It is about expanding opportunities by integrating every citizen of ASEAN and making sure that cutting-edge digital technologies are used to achieve that objective.”

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Singapore chairs the Association of Southeast Asian Nations (ASEAN) this year, and has announced the formation of the ASEAN Smart Cities Network (ASCN). How does this collaboration contribute to the development of ASEAN cities and their people's aspirations?

At a global level, more than half the population lives in cities. This same phenomenon is occurring within ASEAN, and hence there is a focus establishing a network of cities where a couple of things can take place.

First, the exchange of ideas. We can look at how each country has deployed technology and learn from the successes and the failures, which are equally important. This helps us with our integration agenda for ASEAN. We want trade facilitation to have a single window, to have self-certification, and to make sure our payments, invoicing and trade systems interoperate. There's a very large field of collaboration to make ASEAN even more integrated with the use of digital technologies.

The size and diversity of ASEAN allows us to connect the consumer in Singapore seamlessly with the person who's producing the vegetables, rice or services. Similarly, it allows the smallest handicraft maker in any corner of ASEAN to gain access to a larger market of 630 million people seamlessly and at very low transaction costs.

This is an area worth focusing on, and it is why we have launched the ASCN. It goes far beyond just technology and cities. It is about expanding opportunities by integrating every citizen of ASEAN and making sure that cutting-edge digital technologies are used to achieve that objective. 

Watch the interview here:



<https://youtu.be/qHvQXFJ4RFs>

- 01 Dr Vivian Balakrishnan visited Equator@TP, where Temasek Polytechnic students developed an app and ecosystem that brings local neighbourhood businesses online, and enables them to deliver faster. Deliveries can even be crowdsourced from the community.
- 02 During the first ASEAN Smart Cities Governance Workshop in May 2018, National Representatives and Chief Smart City Officers from 10 ASEAN Member States exchanged ideas and discussed action plans towards the common goal of smart and sustainable urbanisation.