

Play it again, Sam

He's survived cancer. He's undergone quadruple bypass surgeries — twice. Four stents hold up his circulatory system.

There's no evidence of these multiple medical setbacks as CEO, inventor and entrepreneur Satyanarayan Gangaram "Sam" Pitroda strides quickly across the ballroom-sized office in a bland government building, fires up his laptop and gets to the point.

"No one has done anything like this in the world," Pitroda told the *Hindustan Times* as he laid out his presentation. "Panchayats, schools, bus stands — everything will be connected to fibre (optic cables)...you create open government in the truest sense, provide opportunities to the bottom of the pyramid."

Pushing 69, Pitroda is an intense man with a trademark shock of white hair and a goatee carefully dyed black. He shuttles between Chicago and New Delhi and — after shepherding India's telecom revolution in another life — is gearing up for his toughest challenge yet and the next big national reimagining: A vast information network that aims to make India's shoddy, Raj-era governance instant, transparent and ready for the 21st century.

As tech whiz Nandan Nilekani (55) races to provide every Indian a unique identity (UID) and help reform government spending on the poor through the project called Aadhar (appropriately, the foundation), Pitroda is quietly at work on preparing the ground beneath the foundation, an equally formidable R27,000-crore effort.

The name for this giant information network is the Public Information Infrastructure (PII), for which Pitroda is an advisor to Prime Minister Manmohan Singh and has been given the rank of an Indian cabinet minister.

As friend and advisor to Rajiv Gandhi in the 1980s, Pitroda set India on the path to where it is today: a nation of more than 670 million mobile connections. Now, as that figure rolls on towards 800 million, he hopes to take that revolution further by wiring up the entire nation. At its basic level, the PII will connect each of the country's 250,000 panchayats to fast, broadband connections. The larger plan is vast: A giant,

nationwide, broadband network that will not only integrate all Indians with their governments but government departments with one another, all educational and scientific institutions, every related government programme and develop new applications for these programmes as the network takes shape. The great hub will have many spokes; Aadhar is one.

With the UID, the broadband-everywhere plan is another cornerstone of the United Progressive Alliance (UPA) agenda for rapid but inclusive growth: Using technology to improve services to the poor, plugging them into the economic engine, reforming government and offering India's youth a chance to build new businesses around a wired nation.

The work has barely begun, but the targets are tight. "I would like to get this done in two years," says Pitroda. "It can be done. It's all there, the political support and the talent; and we already have the money."

The UID and the PII have a similar bill: R27,000 crore. Unlike the UID, the PII needs no budgetary support. It is financed by mandatory payments — five per cent of gross revenue — that telecom companies make to the government, the Universal Service Obligation (USO) fund, meant for rural telecom infrastructure. "A lot of money is already there," says Pitroda. "R 6,000 crore comes in as USO funds every year."

Pitroda's first task will be to cater to UID's needs. As Aadhar begins to scale up next year and uses its data for various applications — from growing banking to the poor to reforming the public distribution system or the national jobs programme — it will need the PII.

"Ubiquitous connectivity across the nation is critical for UID to work," says Nilekani. "We are working very closely with Mr Pitroda."

Pitroda has brought on board two of India's premier scientists: Dr Rajagopala Chidambaram, former chairman of the Atomic Energy Commission and the government's principal scientific advisor; and Dr Krishnaswamy Kasturirangan, former chairman of the Indian Space Research Organisation and now member, Planning Commission.

Kasturirangan, now recovering from a bout of viral fever that was nasty enough to put him in intensive care, is running one of PII's most ambitious spokes, the geographical information system (GIS), which will, much like Google Maps, chart every building, and possibly tree, and merge into it a variety of information from government programmes. These programmes will be controlled by applications to be developed by the National Informatics Centre.

So, the overall plan: UID will tag every person, GIS will tag every place, and the applications will tag every programme. Once the basic PII is in place, Pitroda envisages a burst of opportunity for one of the world's youngest populations.

“Once we do the basic platforms,” says the serial inventor who holds close to 100 patents, “Some kid will figure out the applications.”

The Tech Ideologue

Through the 1960s and 70s, an era when India was stifled by grinding poverty, wars, famine and the licence raj, Pitroda sought and achieved the American dream. Then, he gave up his corporate jet, his life as an inventor, entrepreneur and tycoon to return to India.

He's done this twice in the span of a quarter century: In 1984, when former prime minister Indira Gandhi first invited him; and in 2009, when on Sonia Gandhi's invitation he was given the rank of Cabinet minister and appointed advisor to the Prime Minister for Public Information Infrastructure (PII) and Innovations.

Uncle Sam is not as much in the public eye as he once was, but after being Gandhi family friend and advisor for more than a quarter century, he is an intellectual cornerstone, a technology ideologue for the Gandhi family in its attempts to cement and expand its political base on the foundation of inclusiveness.

“Do you know him?” Congress general secretary Rahul Gandhi repeatedly asked bewildered Uttar Pradesh villagers recently, as he introduced them to Pitroda who walked many of these streets with Rahul's father.

Some in Amethi, the Gandhi family's backward pocket borough, knew Pitroda as Rajiv Gandhi's aide. They also got a taste of his impatient, do-it-yourself approach. When some villagers complained to Gandhi about the lack of electricity, Pitroda pointed to an electricity pole and said: “Fix it yourselves.”

Pitroda's fix-it verve led Rajiv to give him charge of not just telecommunications, but five other national missions: water, literacy, immunisation, dairy and oilseeds. The most successful was the liberalisation of telecom, ending permanently state hegemony and an era where long-distance calling was not just expensive but meant a call to the operator and call-back that could take hours, sometimes more than a day, depending on whether your call was ordinary, urgent or lighting — as the categories were named.

A Gujarati born and raised in tribal Orissa, Pitroda thrives on challenge and adversity. Creating the PII in two years is as big as it gets. The Indian government system does not react kindly to outsiders, as Nilekani found, as Pitroda is finding, despite his long association with the bureaucracy.

“The resistance is starting,” he acknowledges, “But it is part of the process.”

Right now, Pitroda’s people are engaged in difficult, preliminary work: Mapping, studying and analysing every fibreoptic cable laid across India by multiple agencies and companies since the 1990s. “That’s where where are at,” says Pitroda. “It’s very complicated; people say ‘how come you’ve not done it yet?’”

This countrywide fibre — shorthand for fibreoptic cable, essentially glass strands that shuttle copiously more data than their copper predecessors — is the building block of the PII. Pitroda calls it “the backhaul”.

In a new book, *The March Of Mobile Money*, Pitroda and coauthor Mehul Desai explain how the technology to move cash and credit cards to mobile phones is ready. The same technology can work for government payouts, from old-age pensions to payments for the National Rural Employment Guarantee Act. Many believe, wrongly, that wireless technologies and 600 million mobile phones should do the trick.

“The mobile phone is just the access,” says Pitroda.

“The backhaul is the key. All of India cannot be wireless.”

As the UID and the PII are energised, government-led transactions will require instant verifications, much like credit cards; the quantities of data shuttling around will grow exponentially. This requires a stable, nationwide backhaul.

A PII pilot has quietly started, connecting 10 panchayats in Rajasthan’s Ajmer district. It isn’t very stable yet. This reporter’s visit had to be postponed because “connections were down”, as one Pitroda aide explained.

There are connections to be grown and stabilised (state-run BSNL is tipped to run the basic backhaul), contractors and sub-contractors to be appointed, teams to be formed, applications to be created.

Pitroda splits his time between the Gandhi family, the Indian government in Delhi, the international lecture circuit, and his home in Chicago, headquarters of his company, C-SAM. As Chairman, Pitroda readies for a world where mobile phones will be the

gateway to your life: from paying for loans, groceries, taxis, movie tickets to sending personal health information.

For someone raised in one of India's poorest areas, Pitroda's life has always been about climbing upwards, about journeys to new frontiers.

"There are no destinations," he once said. "I keep doing things till something happens."

India and the Gandhi family will hope something does happen.

'The challenges are severe... I hope he can do it'

Conceptually, the Public Information Infrastructure (PII) is as pathbreaking as the UID, and a lot more challenging, if it works out.

In practice, the PII has severe challenges. India has a federated structure, first between the states and the centre, often manifesting itself in severe distrust between state and central governments; even with those states ruled by the same party as at the centre; and then, the silo-ism between even central government departments.

So, it is by no means a given that, simply provided the platform, departments and states will jump upon the PII bandwagon. I think it would be easily the biggest challenge that 'Uncle Sam' would have taken up. I hope he can do it.

— *Prasanto K Roy, Telecommunications expert*

'No one has done anything like this in the world'

We have 600 million mobile phones. It will go to 800 million. We are a nation of a billion connected people. We have created 800,000 km of fibre (optic) backbone. That's huge capacity. We have simultaneously created 3G and opportunities for last-mile connectivity.

We can capitalise on this backbone and upgrade it by changing routers (switches for data) from five gigabits to 10 to 20, as required. So, we have huge infrastructure. Broadband and GIS (geographical information systems) are the next big potential, to zoom in, like Google Maps, on every tree, every panchayat in India.

It is all possible! Today there are vertical, unconnected data silos in India, whether your driving licence, the public distribution system or the national rural employment guarantee scheme. That has to change. So, UID tags every person, GIS every place and the applications we will build tags every (government) programme.

If you integrate all these, you create a public information platform. From the days of the rajas to the British to our modern politicians, a handful of people has always controlled information in India.

You can now begin to democratise government, create open government in the true sense, create opportunities at the bottom of the pyramid. This is the vision. We are greenfield here. Think about it — 250,000 panchayats connected to fibre, 3G, Wimax and other digital links to schools, bus-stands.

It can be done. I would like to do it in two years.

— *Sam Pitroda*

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