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Dismantling Inequality through ASSURED Innovation

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Dr Raghunath Anant Mashelkar is National Research Professor and Chairman, National Innovation Foundation. He is an eminent scientist. Having worked as Director General, CSIR, Dr Mashelkar developed special interest in Ayurveda which reflected through many of his works subsequently. Following is the KR Narayanan 2018 oration delivered by him at Australian National University on 26 April 2018. The oration is highly inspiring and is worth sharing with readers of Annals of Ayurvedic Medicine. The whole oration is available on line at http://www.mea.gov.in/Portal/CountryNews/9368_KR_NARAYANAN_ORATION.pdf

Hon'ble Provost, Deputy Vice-Chancellor, High Commissioner, Professor Jha, ladies and gentlemen.

I deeply appreciate the honour done to me by Australian National University by inviting me to deliver the prestigious 'K. R. Narayanan Oration'.

Kocheril Raman Narayanan was the tenth President of India, and one of our most accomplished civil servants, distinguished diplomats and stellar academicians. I met him for the very first time in 1982. He was visiting my National Chemical laboratory. I had the unique opportunity to demonstrate an innovation from my team of a super absorbing polymer - the Jalshakti, which could absorb water, amazingly, over hundred times its own weight. I still remember the probing questions that President Narayanan asked me about the potential use of Jalshakti in agriculture in rain starved areas in India. And then I had the privilege of interacting with him on issues concerning science and innovation in India on numerous occasions.

President Narayanan and I were born 22 years apart – but his life's story bears a striking resemblance to mine. He was born in a small village in Kerala; I was born in a small village in Goa. He walked 15 kilometres to get to school, much like I walked barefoot to a municipal school. He sometimes stood outside class and eavesdropped on lectures because his family didn't have enough money for tuition. Due to extreme poverty, my widowed mother could not afford notebooks or shoes, and I remember many nights on which I studied under street lights. He took his brother's help to copy notebooks and books and return them, and I remember sitting on a footpath, borrowing books from a kind bookstall owner, quickly reading them and returning them.

In fact, we both even share the turning point of our academic lives. Both of us were Tata scholars. We both left India, only to return when we were fairly young with a zeal to do more for our homeland, he at the age of 27 and I, at the age of 32.

President Narayanan once said *"I see and understand both the symbolic as well as the substantive elements of my life. Sometimes I visualise it as a journey of an individual from a remote village on the side-lines of society to the hub of social standing. But at the same time I also realise*

that my life encapsulates the ability of the democratic system to accommodate and empower marginalised sections of society."

You can see how right he was. I would have had to leave studies despite standing 11th among 1,35,000 students in Maharashtra at the matriculation exam in 1960. But it was the Tata scholarship of 60 rupees per month for six years that helped me study. In 1960, when I used to go to Bombay House, Tata headquarters to collect that sixty rupees a month, if someone would have said that you and Ratan Tata, the head of the Tata family, will be among the only seven Indians from the time of establishment of American Academy of Arts & Science in 1870, who would be elected as Foreign Fellows of that Academy; or that you both will sign the Academy's Fellows book one after the other on the same page on 15 October 2011, I would not have believed it.

And here is yet another validation of what President Narayanan had said.

On 30 March 2000, one of the highest civilian honours in India, Padmabhushan, was bestowed on both me, a Tata scholar, and Ratan Tata, head of the house of Tatas. By whom? President Narayanan, another Tata scholar. This was the best endorsement of President Narayanan's remarks about moving from the 'side-lines of the society to the hub of social standing'.

CSR 1.0: Doing well and doing good

Tata scholarships that President Narayanan and I received were a direct result of the sense of corporate trusteeship that Tatas had always demonstrated. Perhaps it is not widely known that world's first ever charitable trust was set up by Jamsetji Tata in 1892, a long time before the Andrew Carnegie Trust (1901), Rockefeller Foundation (1913), the Ford Foundation (1936) and the Lord Lever Hulme Trust (1925).

The establishment of these trusts was driven by the Tatas' belief in giving back to the people what came from the people.

As J.R.D. Tata had once said, *"The wealth gathered by Jamsetji Tata and his sons in half a century of industrial pioneering formed but a minute fraction of the amount by which they enriched the nation. The whole of that wealth is held in trust for the people and used exclusively for their benefit. The cycle is thus complete. What came from the people has gone back to the people many times over."*

The meaning of such philanthropy has changed over the years. What was considered as corporate trusteeship is now being called Corporate Social Responsibility (CSR). The Tatas did CSR, since they considered it to be their moral responsibility. The Government of India has recently legislated that 2% of the net profits earned by the corporates must be spent on CSR. I would call this as CSR 1.0. Here, part of the surplus wealth goes back to people, either by free will (as in the case of charitable or foundations trusts) or because of the need to comply with government legislation (like India's CSR Act). So I would consider CSR 1.0 as 'doing well and doing good'. This means after one has done 'well' by amassing wealth, one turns to doing 'good', by setting up charitable trusts or foundations.

What I wish to propose is CSR 2.0; not replacing CSR 1.0 but complementing it and bringing a far greater impact by touching the lives of millions. I call this as 'doing well by doing good'. This means 'doing good' itself becoming a 'good business'.

But why should doing good be considered important? The answer is simple – because rising inequality is one of the greatest challenges of our time. Income inequalities, for instance, create access inequalities, which leads to social disharmony. However, reducing income inequalities takes generations. Can we do the magic of creating access equality despite income inequality? Yes, we can – through CSR 2.0.

CSR 2.0: Doing Well by Doing Good

How do we achieve CSR 2.0? We have to make a change

in the way we do business, a change in which we the policy makers think, the way in which we do science, etc. I will talk about the why, what and how of CSR 2.0 through which enterprises can 'do well by doing good'.

What do Indian businesses need to do to achieve CSR2.0?

I propose that private sector can do well by doing good, if they adopt an ASSURED innovation strategy.

For me, ASSURED stands for the following:

A (Affordable)

S (Scalable)

S (Sustainable)

U (Universal)

R (Rapid)

E (Excellent)

D (Distinctive)

A (Affordability) is required to create access for everyone across the economic pyramid, especially the bottom. "Affordability" obviously depends on the target consumer's position in the economic pyramid, the type of product, and its value and the opportunities it may help create. But for the 2.6 billion people in the world earning less than US$2 per day, such affordable products cannot just be "low-cost" but must be "ultra-low-cost". Such extreme reduction targets require disruptive and not just incremental innovation.

S (Scalability) is required to make real impact by reaching out to every individual in the society, not just a privileged few. Depending on the product, the target population may only be a few hundred thousand, or a few million, though in some cases, it may reach hundreds of millions. We will cite examples of each.

S (Sustainability) is required in many contexts; environmental, economic and societal. In the long term, ASSURED innovation must promote affordable access by relying on basic market principles with which the private sector works comfortably, and not on continued government subsidies or procurement support. The crucial importance of this feature is obvious: higher output, better competition (i.e.), competition induced by market-oriented players and not intermediated by political actors), lower cost to taxpayers, and – most importantly – the critical market check that ensures inclusive products provide a good value to consumers and represent a genuine social undertaking. It must be noted that the principle of long-term sustainable production does not negate – rather helps to highlight – the critical role of the government to establish and maintain a well-functioning innovation ecosystem capable of producing ASSURED innovations at a socially optimal level.

U (Universal) implies user friendliness, so that the innovation can be used irrespective of the skill levels of an individual citizen across the economic pyramid.

R (Rapid) means speedy movement from mind to market place. Acceleration in inclusive growth cannot be achieved without speed of action matching the speed of innovative thoughts.

E (Excellence) in technological as well non-technological innovation (such as business model) , product quality, and service quality is required, not just for the elite few but for everyone in the society, since the rising aspirations of resource-poor people have to be fulfilled.

D (Distinctive) is required, since one does not want to promote copycat, 'me too' products and services. In fact, we should raise our ambitions and make D as in 'disruptive', which will be truly game changing.

Achieving all the individual elements of ASSURED Innovation looks seemingly impossible but not necessarily so as we show now.

Let us ask some challenging questions:

- Can we make high speed 4G internet available at 10

cents per GB, and make all voice calls free of cost – that too in a large and diverse country like India?

- Can we make high-quality but simple breast cancer screening available to every woman, that too at the extremely affordable cost of $1 per scan?
- Can we make a portable, high-tech ECG machine which can provide reports immediately and that too at the cost of 8 cents a test?
- Can we make an eye imaging device that is portable, non-invasive and costs 3 times less that conventional devices?
- Can we make a robust test for mosquito-borne dengue, which can detect the disease on day 1, and that too at the cost of $2 per test?

Amazingly, all this has been achieved in India, not only by using technological innovation but also non-technological innovation.

ASSURED Indian Innovation

An exemplar in ASSURED innovation has been recently very successfully demonstrated by Indian private sector.

One of India's early successes was the mobile revolution. In the two decades from 1995 to 2014, about 910 million mobile phone subscribers were added – the numbers are incredible in themselves, but especially so if you consider that this was 18 times the number of landline connections in 2006 when landline subscriptions peaked at 50 million. The era of 'trunk calls' and ISD and STD booths had come to a definitive end. Thanks to liberalisation, the private sector rose to the occasion and innovation flourished in devices, processes, and business models, among others. It represented a joint victory for the public sector, for private enterprise and for people.

Despite India's impressive achievements, the benefits of the digital revolution were not shared by all, thus creating the 'digital divide'. In spite of having a phone and a telecom connection, many could not afford to actually make calls. Some of you may have heard of the Indian term 'jugaad' – the Oxford dictionary defines it as "a flexible approach to problem-solving that uses limited resources in an innovative way." So Indian jugaad came to the rescue and people began using 'missed calls' to communicate. Many a parent, spouse and loved one signalled that they have arrived at their destination by giving a missed call to their anxious relatives and friends. Restaurants that catered to students started 'missed call ordering' – the students would place a missed call, and the restaurant would call them back and take their meal orders. In fact, an entire marketing field called Missed Call Marketing was born.

Look around yourself today, and you will see that the situation has changed drastically. Competition in the Indian telecom sector reached a fever pitch in 2016 with the entry of Reliance Jio Infocomm Ltd., or Jio. Today, millions of Indians enjoy the benefits of free voice calling and extremely affordable (10 cents per GB!) highspeed 4G internet using their Jio connections. Communication behaviours are changing across India as we speak, with the focus shifting from exchanging information to expressing emotion.

One incredible example is that of speech and hearing impaired people using video calls to communicate with each other in sign language. Earlier, they were confined to using SMS and other texting apps. This transformation has happened through myriad technological, product and business model innovations at Jio.

One of the most important innovations at Jio was its configuration- Jio's greenfield LTE network is the first countrywide deployment of VoLTE or voice over LTE in India. Jio has a 4G LTE network with no legacy 3G or 2G services, making it the only network in the world with this configuration. This unique configuration allowed Jio to offer free voice calls to any network across the country – at a time when it accounted for the majority of revenue for other telecom operators. Jio also did away with national 'roaming charges', marking the first time in India's history that the length and breadth of the nation are truly connected.

There are many other product, business model, process and service innovations at Jio, which fulfil all the elements of ASSURED innovation. Consider this: Jio fasttracked Aadhaar-based eKYC (Know Your Customer) roll-out across thousands of stores. This allowed SIM activation in under 5 minutes! Before Jio, the activation process usually took hours if not days and racked up significant costs for the telecom companies. Each one of its over 100,000 telecom towers erected was pre-fabricated and consumes 3 times less power than conventional towers. Other equally important infrastructure development included 250,000 route kilometres of fibre optic cables laid, done using high-tech machines that laid the fibre deep underground with minimal surface disturbance just by drilling two holes.

The Jio Phone is an Indian innovation – by Indians, for Indians – and is offered effectively free of cost to customers. It is a feature phone that again fulfils all the elements of ASSURED innovation and allows users to benefit from access to the internet. I am convinced this will fast track access to high speed internet across the country and empower each Indian to enhance their quality of life.

All these efforts have risen India's rank from #155 just one year ago to #1 today in global mobile internet usage and India now has one of the most competitive telecom networks anywhere in the world. More importantly, Jio has moved India from missed call to video call, a shift from *Jugaad* to systematic innovation. Jio is a true exemplar in ASSURED innovation.

You will say, but this is doing good for the people of India. But is Jio doing well? Is it making a profit? Yes, it is. In the very second quarter of operations, it has turned profitable. So this is indeed a case of doing well by doing good.

Young Innovators Doing Well by Doing Good

Now one might say, a company like Reliance has deep pockets, so they could do it. What about small businesses? What about start-ups? Yes, they can also aspire to do well by doing good, and many of them do.

Let me illustrate the point by talking about some winners of the Anjani Mashelkar Inclusive Innovation Award – an award I instituted in my mother's name for innovations that will do good to the society at large, not just a privileged few.

The awardees are those who believe in not just 'best practices', but 'next practices'. And most importantly meet those tough criteria of ASSURED innovations that represent 'affordable excellence', breaking the myth that 'affordability' and 'excellence' cannot go together. Let me talk about young Indian startups with their hearts in the right place and how they are proving that all this is indeed possible!

In 2015, breast cancer replaced cervical cancer as the leading cause of cancer deaths among women in India. In India alone, almost 200 million women aged 35 to 55 do not undergo necessary annual breast exams which could potentially save their lives. Worldwide, this number is even higher. Late stage detection is the main reason behind breast cancer deaths. So how can we ensure that women in every corner of India – in fact, the world – undergoes breast cancer screening?

UE LifeSciences led by Mihir Shah has developed a handheld device that is used for early detection of breast tumours. It is simple, accurate, and affordable. It is painless because it is non-invasive. Mammography and radiation are eliminated. Screenings are safe, pain-free and private. They have also deployed an innovative pay-per-use model – instead of targeting direct sales – which can empower doctors in every corner of the country to start screening women for breast cancer at the earliest. The device is US FDA cleared and CE marked. It is operable by any community health worker. And it only costs an amazing Rs. 65 ($1) per scan!

But UE Lifesciences is not only doing good, it is also doing well. In the last year or so, the device has earned nearly 1

million dollars in revenue and received purchase orders totalling nearly 2 million dollars. The company has also entered into a strategic partnership with GE Healthcare for marketing and distribution of iBreastExam across more than 25+ countries in Africa, South Asia and South-East Asia and benefit more than 500 million women. Most recently, it was launched in Botswana with a local partner.

This example is not a one-off success story. Here is another: cardiovascular diseases are predicted to be the largest cause of death and disability in India by 2020. Amidst the rising incidents of cardiac diseases – even among younger people – there is a pressing need to affordably, speedily and accurately monitor the heart health of Indians. This has been achieved by another awardee, Rahul Rastogi, who created a portable match box size 12- lead ECG machine. The cost is just Rs. 5 (8 cents) per ECG test. His company created a disruptive high-tech innovative solution for personal cardiac care – the 'Sanket' electrocardiogram (ECG) device.

Sanket is a credit card-sized heart monitor, which acts like a portable ECG machine, making it possible to monitor the heart condition, making it as simple as monitoring the body temperature. The high-tech 12-lead ECG recorder connects to a smartphone wirelessly, and displays and records ECG graphs on a smartphone. The ECG report can be shared instantly with a doctor via e-mail, Bluetooth or message. The affordable device marks a dramatic shift in the way we approach cardiac care – doing away with expensive ECG machines, distant hospitals or laboratories, and skilled technicians. Sanket has filed multiple patents and is all set to bring about a revolution in cardiac care and disrupt this space.

Most recently, they partnered with Tata Trusts to deploy 45 devices in clinics in Tripura for quick screening and diagnosis of cardiac diseases. In the remote and hilly state of Tripura, regular screening would have been virtually impossible.

And then there is the third Anjani Mashelkar Inclusive Innovation Awardee, 3nethra, an eye screening device.

It is so sad that 80% of all blindness is avoidable or curable. India is home to the largest number of vision impaired individuals – but it is not just a numbers problem. The problem of preventable blindness is fraught with challenges such as the significantly low number of properly trained ophthalmologists, lack of awareness, unscalable solutions and inadequate reach which in turn magnifies the problem manifold. Adding to these challenges are problems of cost and accessibility barriers for diagnostic services.

Eye screening device 3nethra provides a portable and cost-effective solution. The innovation comes at a cost that is one fifth of a regular ophthalmic screening device and one that can be operated by a minimally trained operator. It is an intelligent, portable, non-invasive, non-mydriatic (meaning not requiring eye dilation) low cost device that helps in pre-screening of five major eye diseases, namely, cataract, diabetic retinopathy, glaucoma, defects in the cornea & refractive errors with a powerful inbuilt auto detection software.

It is a combination of robust hardware with cloud based computing and sophisticated image analysis solutions. The unique feature of the product is its versatile functionality – detection of five common eye problems in a single screening, automated analysis and report generation; and cloud based storage of individual data, all rolled into a single, compact machine. Today, they have 1,700 device installations across 26 countries and have touched 2 million lives.

Public Procurement Policy for ASSURED Innovation

I have shared with you a few examples of ASSURED innovations, but India is home to dozens, perhaps hundreds of such innovations, which could have been ASSURED Innovations. There are many young Indians championing the cause of development and who have been endowed with unique attributes of innovation, compassion and passion.

But it is a sad fact that in terms of ASSURED innovation, from supply side, they managed the elements of A, U, R, E and D but missed on S & S, meaning they could not achieve scale and sustainability. One was a near miss. Another was a total miss. Let me talk about the near miss first.

We covered Anjani Mashelkar Inclusive Innovation Award in three of India's most pressing health concerns – cancer, cardiovascular disease and needless blindness. But there's another that demands our attention: dengue. The winner last year was Navin Khanna dealing with the challenge of Dengue detection. Dengue is a neglected mosquito born viral disease that is rapidly spreading globally. Dengue incidence has increased by more than 30-fold in the past 50 years. Currently, half of the global population lives under dengue threat.

At the International Centre for Genetic Engineering and Biotechnology in India, Dr. Navin Khanna developed a test that can help address this problem. The three-in-one 'Dengue Day 1 Test' can detect dengue fever within minutes on day one of the fever, affordably in resource-poor settings. It can differentiate between primary and secondary dengue virus infections, which is so vital for clinical management of dengue infected individuals. Interestingly, it can also detect the presence of the virus in a mosquito.

The test kit is now a market leader in India, having captured more than 80% market share. Its cost is 3 to 4 times less than a conventional test at a little over $2 per test. The test kit is now being exported to other countries too. However, their path to success wasn't an easy one.

Despite having a high-performing rapid dengue test that could detect both primary and secondary dengue virus infections in a reliable manner, it was still an uphill task to get it accepted by the end-users. It was 2013, and many cities in India witnessed a large number of dengue cases. Three companies from USA, Australia and South Korea sold their yearly stock of dengue test kits within a few weeks and no test kit was available for use in the Indian market. When the India-made kit was offered to them, it was met with a great resistance. Most end-users were unwilling to try a new kit and were waiting for arrival of new consignments of dengue kits from other countries.

Because of the extensive paperwork required for import of these tests, companies from USA and Australia were unable to make the next shipment of dengue kits to India, however, a South Korean company was able to ship a new consignment to India. This shipment landed up in Africa by mistake instead of reaching India! So the scenario was bleak in India, no dengue kits were available and suspected dengue cases were increasing and creating mass panic. It was at this stage that the endusers relented and tried the Indian kit – after which there was no looking back. All stakeholders were delighted with the easy availability, high performing, and affordable dengue test kit. When stocks of imported kits finally showed up in India, there were no takers. In this case, serendipity and not a system played the biggest role.

So the near miss was Navin Khanna's Dengue Day 1 test. The total miss was Simputer. Let me explain.

Simputer was designed to be a low cost and portable alternative to PCs. The idea was to create shared devices that permit truly simple and natural user interfaces based on sight, touch and audio. Simputer was to read and speak in several Indian languages in its initial release. Simputer prototypes were launched by the Simputer Trust on April 25th, 2001.

It was hailed for its 'radical simplicity for universal access' Before the arrival of the smart phone in 2003, Simputer had anticipated some breakthrough technologies that are now commonplace in mobile devices. One of them was the accelerometer, introduced to the rest of the world for the first time in the iPhone. The other was doodle on mail, the ability to write on a phone, that was later a major feature on the Samsung Galaxy phones.

Bruce Sterling writing in New York Times magazine had said, "The most significant innovation in computer

technology in 2001 was not Apple's gleaming titanium PowerBook G4 or Microsoft's Windows XP. It was the Simputer, a net-linked, radically simple portable computer, intended to bring the computer revolution to the third world.…"

Despite having achieved the elements of A, U, R, E & D in ASSURED, what went missing was S & S, namely scale and sustainability. This was because of the absence of innovation-friendly public procurement policy despite many rural-specific demonstrations.

Innovations are products of creative interaction of supply and demand. Besides supply side initiatives, we need aggressive demand side initiatives – and public procurement is an obvious choice. With large procurement budgets, the government can not only be the biggest, but also the most influential and demanding customer of these innovations, making them truly ASSURED.

The government approach could be based on three pillars. First, government could act as the 'first buyer' and an 'early user' for small, innovative firms and manage the consequent risk thus providing the initial revenue and customer feedback they need to survive and refine their products and services so that they can later compete effectively in the global marketplace. Interestingly, based on a survey of 1,100 innovative firms in Germany, it was found that public procurement is especially effective for smaller firms in regions under economic stress, a helpful lesson for India.

Second, government can set up regulations that can successfully drive innovation either indirectly through altering market structure and affecting the funds available for investment, or directly through boosting or limiting demand for particular products and services.

Third, government can set standards that can create market power by creating demand for innovation. Agreed standards will ensure that the risk taken by both early adopters and innovators is lower, thus increasing investment in innovation. The standards should be set at a demanding level of functionality without specifying which solution must be followed. By not prescribing a specific route, innovation is bound to flourish.

Role of Strong Public Policy

There is also a case where private sector wanted to do public good, but due to lack of public policy, it did not scale up.

As we all know – and some of us may have experienced – poverty forms a vicious circle. People are poor because they are illiterate. They are illiterate because they are poor. India's National Literacy Mission has been making slow progress to address the challenge of adult literacy in India since 1988 – 'slow progress' because there are still almost 300 million adult illiterates in India.

An Indian company developed a unique technique to address this problem. FC Kohli from Tata Consultancy Services came up with an innovative teaching method based on the theory of cognition and laws of perception. Their initiative, called Computer Based Functional Literacy or CBFL could teach an illiterate individual to read a newspaper with only 40 hours of training! They took a systems approach and used multimedia to focus on words rather than the alphabet. Their technique harmonized visual and audio patterns to enable reading, and helped retention of cognized patterns in subconscious memory. The cost worked out to only $2 per person, as opposed to $16 per person using conventional methods.

CBFL didn't require any certified professional teachers – only para-teachers called 'preraks', which is Hindi for inspirers. CBFL's dropout rates at 10-12% were much lower than that of conventional initiatives. It allowed for both flexibility in learning and standardisation in teaching. While the method focused on reading, it acted as a trigger for people to learn to write on their own. This experiment was first conducted in Medak village near Hyderabad. Without a trained teacher, the women started reading the newspaper in Telugu in 8 to 10 weeks. Thereafter, FC Kohli's team carried out more experiments at 80 centres,

and with over 1000 adult participants. The results were spectacular.

If we had wholeheartedly adopted this in India, our entire population could have been made literate in just 5 to 7 years! The potential was massive - there are 800 million illiterates in the world – this innovation could make them literate by spending less than US$2 billion. However, lack of the right policy environment limited CBFL's scale-up. IT ministries or literacy departments didn't partner with CBFL. There was no infrastructure support for network and the mass procurement of IT hardware posed huge logistical problems. Add to that issues related to customs clearances, octroi and other similar tariffs. This is a glaring example of when an innovation could have impacted not just India, but the entire world, but still failed to scale up due to lack of support.

But here is a contrary example of how a hard and strong public policy can work. Just over a year ago, I would have said that we stand on the cusp of a digital revolution. Today, I can say without any ambiguity that we are right in the midst of it. Our nation created history in 2014 when under the Pradhan Mantri Jan Dhan Yojna 1,80,96,130 bank accounts were opened in India in just one week, creating a Guinness World Record. It will provide access to various basic financial services for the excluded - basic savings bank account, need-based credit, remittance facility, insurance and pension. JAM combining J (Pradhan Mantri Jan Dhan Yojna), A (Aaadhar identification and authentication) and M (mobile telecommunications) created the fastest and largest financial inclusion in the world, with 300 million plus bank accounts opening up in record time. Before JAM, the disadvantaged sections of society were exploited by money lenders – both in rural and urban area. This bold policy innovation will allow for large-scale, technology-enabled, and real-time delivery of welfare services.

Just like India jumped from landline to mobile telephony, Jan Dhan, Aadhar & Mobile (JAM) will together allow us to leapfrog into the next phase of financial inclusion. It will allow millions of people to become a part of the mainstream economy and provide them access equality despite income inequality. JAM has all the 7 elements of ASSURED.

It is glaringly obvious that the tide of exponential technology, where performance is rising exponentially and costs are falling exponentially, will make many things previously considered impossible possible in entirely unbelievable ways and timelines making the goal of achieving ASSURED innovation easier. ASSURED innovation can greatly help any country in achieving multiple objectives. First, social harmony. It will help in creating access equality despite income inequality. Second, affordability. It will lead to scale, thus bringing equity to any population. Third, excellence. On one hand, excellence will meet the rising aspirations of local populace for high quality goods and services. On the other hand, excellence will open up opportunities for competitive exports to global markets.

Indian Business can do well by doing Good – How?

Many of these game-changing ASSURED innovations have some tenets in common. For instance, converting non consumers to consumers; rethinking – not just remodelling – offerings; innovating across product, process and business model; and putting 'better' before 'cheaper'. The perspective should shift to seeing suppliers as partners, employees as innovators and customers as people.

On the consumer front, it is important to foster empathy and explore co-creation, attack problems that MUST be solved, not those that CAN be solved. What can be done internally? Setting 'stretch goals' that sound impossible, challenging the fundamentals, putting your best minds to work, learning from unrelated domains, and interacting with top notch innovators. Making high technology work for the poor is important, but even more important is believing that they can adapt to it – they always do. They are demanding and exacting about what they want from a product or service.

The research, design and development teams must change their mind sets. Besides aiming at technologically sophisticated performance rich products, they must move towards frugal, functional but high quality products. Rather than removing features to reduce costs, they must reinvent the products ground up. Rather than 'technology push product out' approach, they must move to 'customer centric market based' approach. Rather than using developed world products to transform the existing markets, they must build new global growth platforms based on emerging market needs. Further, business must try to straddle the entire economic pyramid by not just aiming for premium price high margin products but also going for affordable price high volume products. Finally, they must move from current markets-old money mind set, where they keep on fighting for increasing share of a constant sized pie, to new markets -new money mind set, which will help them take a share of the resultant bigger sized pie.

But fundamentally, more than anything else, it requires one to believe in the idea that happiness, health, prosperity, and peace are basic human rights. That people, regardless of caste, creed, gender, nationality etc. are people first. Innovation not just for those who can afford it – but for those who need it most.

Let me sum this up. ASSURED Innovation is the backbone of CSR 2.0. ASSURED Innovation is the way by which private sector can achieve the noble goal of doing well by doing good'. ASSURED Innovation can be a "two word" National Innovation Policy statement for many countries in the world. ASSURED Innovation can dismantle inequalities by creating the magic of access equality despite income inequality, thereby bringing back social harmony, which is the need of the hour.

Finally, as a proud Indian, I constantly remind myself that India has been a nation that has always been an ambassador of peace and goodwill for the rest of the world. I am confident that India is well-placed to become the next global ambassador of ASSURED innovation for our assured future, and that too not for a privileged few, but for all.

Thank You.