Demonetised Living

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India has just been through a rough patch wrought by the demonetization of high value currency notes amounting to about 86 percent of the total value of notes in circulation, and worth about Rs 15 lakh crore. The measure, claimed as a 'surgical strike on black money' by the Government, attracted widespread opprobrium from the so-called liberal literati. The measure was opposed and derided almost universally by leftist academicians, self-proclaimed experts, opposition politicians as well as economists of many hues including those famously described as "Harvard trained economists". They demonized the step as a "historic blunder" and its driver as a heartless, Tughlaqesque despot insensitive to the unspeakable suffering it had caused to common people. But the measure apparently did not alienate people, on the contrary, it rather seemed to have gained their approval. While everybody cried that the entire cash-driven informal sector was finished by this thoughtless step and predicted the imminent collapse of the Indian economy, nothing like that happened; even a state like UP where the economy was largely dependent on the informal sector voted to power, by an overwhelming majority, the party that demonetized the high denomination notes on November 8 2016.

That was demonetization at a gross level. Peter Diamandis, a Harvard-MIT trained engineer and founder of the Singularity University talked of "rapid demonetization of the cost of living itself" within the next 20 years, opening up ever cheaper means to satisfy our basic needs. In the face of robots increasingly taking away our jobs, this sounds too good to be true. But Diamandis has shown that powered by innovations in "exponentially accelerating technologies" like network sensors, artificial intelligence, robotics, synthetic biology and 3D printing, the costs of humanity's basic requirements - like housing, transportation, food, healthcare, entertainment, clothing and education on which an average Indian spends 90% of his income - will continue to fall exponentially, eventually becoming nil. It will radically alter the way humans have lived and worked all along on this planet since the dawn of civilization.

In the book "Abundance: The Future is Better than you Think" written jointly with the science journalist Steven Kotler in 2012, Diamandis showed how products and services worth $900,000 (Rs 6 crore) if we were to purchase these between 1969 and 1989, like video conferencing facility, GPS, video player, digital voice recorder or a 5 megapixel camera, have already become demonetised, and which today carry zero cost, thanks to our smartphone of Rs 5000 in which all these features come free. Smartphone has even obviated the need for a free press. So even if your child is not getting a job, rest assured, because his basic needs will be taken care of almost free of cost. Progress in exponentially growing technologies will enable us to make the next two decades more productive in terms of benefits to humanity than the last two centuries. The divide between the privileged and the commoner which has all along thwarted humanity's progress would then be a thing of the past, and abundance will be within everybody's reach. It is all about technology and innovation, which managed well, can turn scarcity into abundance.

Technology has indeed solved many of our problems and drastically reduced the costs associated with those. Remember the depressing memories of the PL-480 days during the mid-sixties, when, after two successive years of savage drought, and lacking any foreign exchange to buy food in the world market, we were forced to import American wheat under the most humiliating terms? If today we are able to feed our billion plus population and then export the surplus foodgrains, it is only thanks to green, blue, white and yellow revolutions brought in by technology.

As Diamandis points out, thanks to the use of exponential technology, many of our basic needs have already become practically demonetised, for example, photography, music and entertainment, access to information and research, telephone or video calls etc., and many more are in the offing. Once Uber launches its fully autonomous services, transportation and insurance costs will plummet, and the automotive market worth a trillion dollar will become effectively demonetised. Price of food globally has been on a downward spiral since the last century, having already dropped by more than 50% since 1960, and with the use of vertical farming that eliminates the need for fertilisers and pesticides, advances in genetic engineering of food products and with better management of transportation, storage and handling that today accounts for 70% of the total food costs, hunger could be effectively eliminated from the world. The increasing world population and growth in income will continue to exert pressure for increased and more sustainable agricultural production to feed the planet. A report on "Food Security in a World of Natural Resource Scarcity: The Role of Agricultural Technologies" released in 2014 by the International Food Policy Research Institute (IFPRI), Washington D.C. had estimated that improved agricultural technologies could increase the yield of crops globally by as much as 67% and cut food prices nearly by 50% by 2050.

Housing today is costly only because of location, but once we are able to operate from any place, and access all essential services that we need, there would be no need to seek a preferred location in a city. We can then live anywhere, work from our homes or drive to the nearest workplace in autonomous cars, and it matters little even if the journey is taking a long time, because the time can be productively utilized thanks to the improved connectivity. Our workplace may even be a virtual office and we may no longer need to commute even - just plug to our virtual workspace, and telecommute. It would be the same with energy, the driver of technology and civilisations. Poorest countries on our planet, fortunately, are the sunniest and the cost of solar power is plummeting radically. With advances in technology, energy will continue to demonetize ever faster.

Healthcare remains a stubborn area, but advances in robotics are already opening the possibility that in the near future, robots will take over surgery, exercising a precision far beyond the capability of the most experienced of human surgeons. With increasing deployment of robot-surgeons, the cost will reduce drastically. As regards prognosis of diseases, the price of genomic sequencing is dropping fast, and the more accurate our sequencing becomes, the easier it would be to arrive at the correct diagnosis. Cost of medicines will also come down as we learn to use 3-D printing for manufacturing medicines, with our home-based 3-D printing machines.

Access to good education has always drawn the dividing line between the elites and downtrodden, the rich and the poor. But even education has already been substantially demonetized. Information and knowledge are freely available in the internet, and with free Massive Open Online Courses like

Coursera, Khan Academy, and online availability of high-quality instructions from Harvard, MIT, Stanford, IITs etc. available to anyone with an internet connection, much of the problem of access has already been solved. It will of course still take several decades in a country like India, but it would be far easier to impart internet-based quality instruction than reform our decrepit public school system which is in complete disarray toady. Education will be liberated from the tyranny of universities and schools, with the child of a billionaire and the child of a commoner will have access to the same education in foreseeable future. That would be the perfect democratization, liberalization and globalization of education.

Diamandis and Kotler, co-authored another book "Bold: How to Go Big, Create Wealth and Impact the World" in which they identified the Six phases of exponential technologies: Digitalization or introduction of digital technology; Deception, during which technologies advance quickly, often below the radar; Disruption, which disrupts established industries; Demonetization, eliminating the need to buy something, like digital photography abolishing the need to buy films; Dematerialization, when physical tools are replaced by digital apps; and Democratization, when access becomes universal as costs decrease.

In a lecture delivered at the world economic Forum at Davos in 2015, Diamandis gave an example of the power of exponential technologies. In 2010, the average speed of a $1000 computer was 100 billion calculations per second. In 2023, it would become 10,000 times as much, which is the speed at which our brain computes. 25 years hence, a $1000 computer is likely to have the computational power of the entire human race, leading to unprecedented democratization of knowledge.

But the revolution may also cause disruption, if we cannot manage it well. An example is Kodak, which in 1996 was a $28 billion company with 140,000 employees. It had invented the digital camera in 1976, but failed to see its potential. In 2012 it went bankrupt, disrupted by its own invention in the same year that another digital imaging company, Instagram, with only 13 employees, was acquired by the facebook for more than $1 billion. A similar story is that of HMT in India which was a market leader in wrist watches but failed to see the potential of quartz watches, an opportunity that others grabbed and shoved HMT out of the market altogether. These disruptions will cause turmoil in the short term, but eventually everything will settle into a demonetised equilibrium in which humanity, if it so chooses, can live peacefully and harmoniously, without scarcity and without conflict.