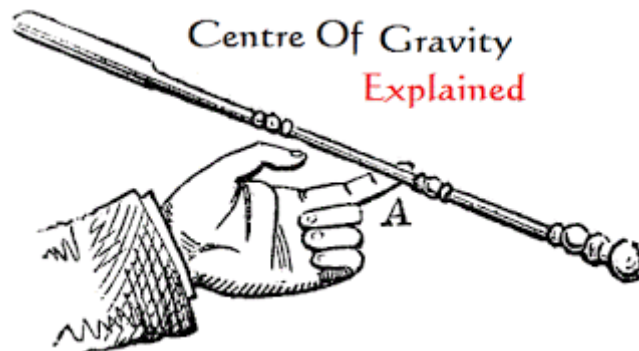


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The trouble with spectrum pricing[Telecom, Hindu Editorial]

The Telecom Regulatory Authority of India's latest recommendation on the [reserve price for the auction of the 700 MHz wireless spectrum](#) could be a case where the pricing of a public asset may end up having the exact opposite effect: making a scarce resource so expensive that its meaningful utilisation is compromised, and thus rendered unavailable to serve the larger public good. That the telecom regulator, which has been in the vanguard of trying to spur both government and industry to become more responsive to the larger public interest, should have opted to set such a high valuation benchmark is a touch ironic. About 14 months ago, TRAI had, in a missive to the Department of Telecommunications, spelt out the rationale behind its recommendations on valuation and reserve price of spectrum. While the specific backdrop of that particular communication was the likelihood of the government opting to hold a supply-constrained auction, the broader arguments it made then remain as germane. The regulator had pointed out that a very high per unit price realisation, while possibly helping meet immediate fiscal needs, would only bleed the industry of resources. The high price of spectrum would also affect private investment in network expansion and

infrastructure. The financial viability of the industry, TRAI posited, was crucial both for its own health and for the government to earn recurring revenues. All these issues are still relevant, as underscored partly by Bharti Airtel's recent results. The company has reported its first quarterly profit decline in two years, largely on account of higher spectrum amortisation expenses.

It is no one's contention that the telecom regulator had not approached the task at hand with full transparency and openness in its quest to arrive at meaningful valuations for seven frequency bands. A consultation paper that sought comments from all stakeholders was followed by an open house discussion. TRAI spelt out the points made by varied participants, including many from the industry who argued against an auction of the 700 MHz airwaves at a time when the network and device ecosystem is not sufficiently developed. Still, considering the performance efficiency of the particular spectrum band and its utility in improving and expanding high-speed wireless broadband services across rural areas, the regulator recommended that the government put on the block the available frequencies in this spectrum at the next auction. It is in plumping for its own April 2012 formulation of four times the reserve price of the 1800 MHz spectrum that TRAI appears to have made a less-than-appropriate choice. This is particularly so as spectrum sharing and trading have been operationalised in the intervening period, boosting overall supply. The regulator's recommendation, for almost Rs.11,500 crore per MHz, if accepted, holds risks for an industry that serves a crucial socio-economic objective.

Keywords: [Telecom Regulatory Authority of India](#), [TRAI](#), [700 MHz spectrum](#), [spectrum auction](#), [spectrum pricing](#)

Source: [xaam.in](#)

[Sugar tax may be the bitter pill to cut obesity\[Health , Economy , Hindu Editorial \]](#)

After years of waiting, the World Health Organisation (WHO) finally took a stand on January 25 and urged governments to levy taxes on sugar-sweetened beverages to end childhood obesity. The recommendation was based on a new report commissioned by it. "The Commission believes that there is sufficient rationale to warrant the introduction of an effective tax on sugar-sweetened beverages," the report notes.

Besides levying taxes, the WHO also recommends a host of other interventions

such as increasing the amount of physical activity and improving access to health food.

The impact of taxation measures on purchasing behaviours has been well documented in the case of tobacco. However, in the case of sugar-rich drinks, the WHO acknowledged that strong evidence on the benefits is lacking but underlined that evidence will become available once countries that have been levying such taxes on unhealthy foods and sugar-laden drinks “monitor their progress”.

Hungary, France, Finland and Mexico are among the many countries that have taken to such measures. A tax of €1 for a container has been levied in France since January 2012 to combat rising obesity and raise funds. Thirty-four U.S. States and the District of Columbia have food taxes that affect sugar-sweetened drinks; 23 States levy taxes targeting these drinks.

Mexico, which has one of the highest prevalence rates for overweight and obesity in the world at over 33 per cent in the age bracket of 2-18 and around 70 per cent for adults, has demonstrated that significant reduction in consumption can be achieved through taxation. Excise tax of 1 peso per litre on sugar-sweetened drinks and ad valorem tax of 8 per cent on energy-dense foods have been in place in the country since January 1, 2014. During the first year of taxation, a 6 per cent drop in average volume of unhealthy drinks purchased was recorded. The reduction was greatest among households that belonged to the lowest socio-economic stratum, notes a paper published in January 2016 in the journal *The BMJ*. An earlier study of November 2013, published in the journal *BMC Public Health*, also reported that an increase in the price of sugar-laden drinks was directly associated with reduced consumption in Mexico, Brazil, France, and a few States in the U.S.

While the risks of childhood obesity are greatest in lower socio-economic groups in the high-income countries, data from Brazil and Mexico, which are largely middle-income countries, confirm that levying taxes on sugar-rich drinks achieves the desired results in the target population.

The situation at home

In the case of India, at the current rate of sales of sugar-sweetened drinks, a 20 per cent increase in taxes will reduce overweight/obesity by 3 per cent (11.2 million cases) and diabetes by 1.6 per cent (4,00,000 cases) between 2014 and 2023, a January 2014 modelling study published in the journal *PLOS ONE* said.

One of the reasons for the WHO recommending taxation measures to rein in consumption of unhealthy food is the burgeoning number of overweight and obese children younger than five years. In 2014, 41 million children in this age group were either overweight or obese across the world.

India may be one of the biggest contributors to the global pool as obesity in people in the age group of 15-49 has increased steeply during the last few years, as the National Family Health Survey (NFHS) 2014-2015 reveals.

In 11 of the 13 States where surveys were conducted in 2005-2006 and 2014-2015, the percentage of men and women with obesity (body mass index or BMI ≥ 25 kg/m²)

had increased sharply. Surprisingly, except in a few States such as Bihar, Meghalaya and Tripura, obesity has increased modestly among women but doubled or more than doubled in men in all the States between 2005-2006 and 2014-2015.

However, nationally accurate estimates of childhood obesity in India are not available. According to a study published in the journal *The BMJ* last year, prevalence of childhood obesity is between 5 and 14 per cent. The prevalence of overweight children under five years in India is less than 5 per cent, the WHO notes; this will still be big in absolute numbers.

A comprehensive national nutrition survey to be undertaken by UNICEF from March this year will cover children in the age group of 0-19 across all 29 States. This will provide the much-needed data that can guide the government in framing policy guidelines. Meanwhile, all stakeholders need to use the growth charts revised last year by the Indian Academy of Paediatrics for 5- to 18-year-old children to define overweight and obesity (BMI of 23 and 27 respectively).

India faces a double whammy of obesity and underweight/wasted children. Though with respect to the last NHFS survey the percentage of underweight children has reduced this time, it is still very high – from nearly 14 per cent in Sikkim to nearly 44 per cent in Bihar. This is a big concern as children who were born with low birth weight are at a greater risk of becoming overweight and obese when they consume energy-rich diets and have a sedentary lifestyle.

This singularly must be the reason why India should seriously consider introducing additional taxes on sugar-laden drinks, besides encouraging more physical activity in schools and other interventions.

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Keywords: [sugar tax](#), [WHO](#), [obesity](#)

Source: [xaam.in](#)

[Giving cities the smart edge](#) [\[Hindu Editorial , Smart](#) [Cities \]](#)

The Central government's framework for [20 cities to become 'smart' over a five-year period](#) can cover new ground if it makes intelligent use of information

technology to deliver better civic services. Rapid and poorly regulated urbanisation has overwhelmed urban governments, rendering them [incapable of providing even basic services](#) such as clean water, sewerage, pedestrian-friendly roads, public transport, uninterrupted power, street lighting, parks and recreational spaces. So weak and uncoordinated is governance that commercial entities have wilfully violated building regulations and put up unauthorised structures – with severe impact on congestion, air quality and flood management – and governments have gladly regularised the violations later. The [smart city plan now proposes to intervene and bring some order by upgrading](#) the physical infrastructure in select enclaves, and incentivising the use of information and communication technologies. Urban Development Minister M. Venkaiah Naidu has come up with a generalised definition of a smart Indian city as one that “enables a decent life to the citizens, and green and sustainable environment, besides enabling adoption of smart solutions”, but the exercise should lead to measurable outcomes.

Also read: What are Smart cities?

The first batch of smart cities would create virtually new business districts in several cities, marking a departure from the disaggregated urban development witnessed over the past few decades. This area-based development approach makes it imperative that the resulting demand for mobility to and from the ‘smart’ area be made an integral part of the plan, with an emphasis on walkability, use of non-motorised transport and access to public transport. Ahmedabad and Bhubaneswar have shown high ambition by opting for a common travel card. Others such as Indore, Davangere and Belagavi plan Intelligent Transport Solutions, something that has been unattainable for even a big metro such as Chennai. Although it enjoys high visibility, the [smart city programme is merely a framework for urban development](#) aided by the Centre with a small initial seed fund of Rs.500 crore, while additional finances have to come from public-private partnerships and local revenue. State governments, including those left out of the first list, could unlock the potential of all cities with development policies that aim at structural change. Improved public transport, for instance, has an immediate positive impact on the local economy. Technologies such as GPS to inform passengers in real time on their mobile phones, and common ticketing, increase the efficiency of transport use. Universal design in public buildings and streets would help all people, including those with disabilities. The challenge for Smart Cities 1.0 is to provide proof of concept quickly and make outcomes sustainable. Care also needs to be taken that the effect is not to create gated communities of best practices and civic upgrade in a wider landscape of urban distress. It is crucial that these urban enclaves cater to the housing, health, education and recreation needs of a wide cross section of society, and that the convergence of the Smart Cities programme with existing urban renewal projects countrywide be smooth.

Keywords: [smart city mission](#), [smart cities project](#), [NDA government](#)

Source: [xaam.in](#)

Betting big on big data [SciTech , Hindu Editorial]

Science, as in other fields, is not buzzword-free and one such word doing the rounds is “Big Data”. Just how big is “big”? And is there any use of spending money and producing a large amount of data in India when the West is already pumping so much data into public databases?

In the context of science, big data refers to the explosion of data now available as a result of modern, large scientific experiments and how it far exceeds what has been traditionally available. For example, the amount of data produced from analysing the network of genes – or genomes – from bacteria, plants, viruses, vegetables and animals in the last five years exceeds all such data from the fields of life sciences/biomedical research in the last five decades. It is estimated that by 2025, exabytes (10 bytes) or the equivalent of about 300 million full-length ‘Star Wars’ of genomics data will be produced globally and will far exceed that from Twitter and YouTube.

Moreover, the genomics data being produced roughly doubles every year and will require new solutions in precision and accuracy for storage, analysis, sharing and security. All this is of relevance to every citizen in India and not just computer geeks because it is such data that will help find cures to vexing human diseases.

Disease study

A study published last week in the journal *Science Translational Medicine* has reported the use of big data to untangle a lethal class of diseases called prion diseases. They were previously known to have been caused by PRNP, an errant gene, and it was thought that having even one of the known 63 variants of the gene would lead to the fatal disease. Thanks to cooperation from all involved – scientists from multiple countries who shared the data on prion disease genetics and study participants who agreed on sharing data from a large database and patients – researchers combed through the genomes of nearly 63,000 people and found that only four variants were pathogenic, three completely harmless and no more than 10 per cent likely to cause disease. A killer disease had suddenly become much less fearsome and, through it, new ideas have opened up on finding a cure.

There are lessons from this for India. It can begin by predicting global outbreaks of infectious diseases such as dengue fever and malaria using customised models and an open-source framework. Big data can identify the cases of dengue fever or malaria cases on a map and predict the spread of disease by overlaying the disease map with that of the movement of people. India will soon

have the second-largest smartphone market in the world. Therefore, by using mobile phone data analytics and real time movement of infected people, it is possible to pinpoint sources of infection and predict areas of transmission.

Before doing this and going on to more ambitious targets such as curing diseases, a crucial step is to also learn from international efforts in large data generation and sharing by building proper infrastructure at multiple levels. To find cures for rare diseases and others such as cancer and heart diseases, we need to generate a large amount of genomics data, best done by building consortia on normal and different diseases and making data available openly without compromising patient privacy. In this, we can leverage best practices already existing in the country, such as in sectors like information technology, high-energy physics and astronomy, in building smart analysis, visualisation and interpretation platforms for big data. Generating big data is necessary but will not be sufficient to solve societal problems unless it is available openly without compromising patient privacy and ethical standards. Therefore, a comprehensive national big data policy framework is needed for analytical and other solutions towards data storage, analyses, interpretation, archiving, sharing, distribution and collaboration.

Making all scientific data open, free and readily accessible without compromising privacy and ethics will be the right step. Placing data in the hands of more than 500 million young Indians will help usher in the next phase of science-driven innovation in India.

(Binay Panda is at Ganit Labs, Bengaluru.)

Keywords: [Big Data](#), [genomics data](#), [Science Translational Medicine](#), [prion diseases](#)

Source: [xaam.in](#)

[Masculinity is in a crisis. Here's 'Y' \[ScieTech , Hindu\]](#)

Researchers use assisted reproduction techniques to sire mice without the all-important male chromosome

Manhood may have received its nastiest blow yet. Biology textbooks have long informed us that the 'Y' chromosome, present only in males, is critical for reproduction. But a study by researchers at the University of Hawaii (UoH) has

shown that healthy mice can be made, using assisted reproduction techniques, without any of the all-important 'Y' chromosome genes. Normally a person gets 23 chromosomes –the repository of our DNA – from each parent; 22 of the pairs are called autosomes and the 'X' and 'Y' are called sex chromosomes. The 'Y' chromosome is present in males, who have one 'X' and one 'Y' chromosome, while females have two 'X' chromosomes.

The diminution of man started two years ago after the research team, led by Monika A. Ward, UoH, showed that of the many genes of the 'Y' chromosome, only two – 'Sry' and 'Eif2s3y' – were needed for male mice to sire offspring with assisted fertilisation. Now, the same team, with a collaborating researcher from France, Michael Mitchell [French National Institute of Health and Medical Research] (INSERM, Marseille), upped that and produced males completely devoid of the entire 'Y' chromosome.

In last Friday's edition of the journal *Science*, Ms. Ward and her colleagues describe the production of these gender-bending mice by detailing how they first replaced the first gene 'Sry' with one from the autosome and the other with a gene from the 'X' chromosome. While one may quibble that the 'X' chromosome used was from the male, there's been related research showing that the days of the 'Y' chromosome are numbered. Both the 'X' and 'Y' chromosomes are known to lose genes over time and due to the frenetic shuffling of evolution. However, women – by virtue of having two 'X's – were somehow able to swap and maintain their genes among themselves. The 'Y' – unpaired and solitary in the male – does not get a chance to replenish its genes as much. Also, there are far fewer genes on the 'Y' chromosome than on the 'X'. Jennifer Graves at the Australian National University caused consternation earlier this decade when she estimated that within five million years, the 'Y' chromosome, and the men it produces, would disappear. More ominous was genetics professor Bryan Sykes who predicted the demise of the 'Y' chromosome, and of men, in as little as 1,00,000 years in his 2003 book *Adam's Curse: A Future without Men*.

Not so grave

A flurry of studies that have since looked at the proclamations of Prof. Sykes and Prof. Graves more closely have now found that the future isn't as dire. The loss of genes, apparently, isn't a steady loss and there are long periods of stability followed by bursts of attrition.

Jennifer Hughes and her colleagues at the Whitehead Institute in Cambridge, Massachusetts, compared the human 'Y' chromosome with that of the 'Y' from the chimpanzee – supposed to have diverged at least 4 million years ago from the line that begat humans – and also with that of the rhesus monkey which diverged from humans 25 million years ago. They reported in the journal *Nature* in 2012 that human chromosomes had lost no further genes in the last six million years, and only one in the last 25 million years. "The 'Y' is not going anywhere and gene loss has probably come to a halt," Dr. Hughes told the BBC.

While masculinity can breathe easy, Dr. Ward's studies may provide new lines of investigation for male infertility. Though these results only hold for mice and there are formidable ethical barriers to be negotiated, one thing is incontrovertible by now: it simply isn't raining men anymore.

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Keywords: [Y chromosome](#), [masculinity](#)

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[NITI Aayog mediates between Telangana and Centre](#)

NITI Aayog plans to facilitate face-to-face consultations between state governments and Central ministries to clear all pending issues.

An experiment on this was made recently, when the Aayog brought together top officials from the newly-created Telangana state and Central ministries to resolve outstanding issues.

An official statement said around 20 important issues flagged by the state government relating to the ministries of coal & power; petroleum & natural gas; environment, forests & climate change; culture; finance; and rural development were discussed in the two-hour meeting chaired by Niti Aayog vice-chairman Arvind Panagariya.

At the end of the meeting, nearly all but two or three issues could be

resolved to the satisfaction of both sides, while substantial progress was made even on issues that could not be brought to full resolution during the meeting.

“It experimented with a new approach to the resolution of issues between states and central ministries by bringing the two sides face-to-face with the vice-chairman actively nudging them towards a possible solution,” the statement added..

Source: xaam.in