Opinion

WEDNESDAY, JANUARY 9, 2019

AI MONITORING AT KUMBH

Awanish Awasthi, UP additional chief secretary

This will be for the first time that AI will be used in Kumbh Mela. Over 1,000 CCTV cameras will be used to monitor various movements across the Mela area spread across 3,200 hectares

Monsanto wins at SC, govt still keeps it down

SC rejection of govt claim that its patent is illegal will help all biotech firms, but govt policy keeps new seeds away

BIOTECH MAJOR MONSANTO won a big victory in the Supreme Court with the court declaring that its BT cotton patent was a valid one—in the Delhi High Court, the government had argued that the government-granted patent was illegal—but it is not clear what the victory will amount to. As a result of unfriendly government policy that includes a control on its pricing, Monsanto has already withdrawn its latest generation of cotton seed technology from the government's approval process. Ironically, illegal copies of Monsanto's latest seeds are already flooding the market and one estimate is that they comprise 15-20% of cotton seeds being used today. The seeds, being sold by traders—and often without even proper labelling—retail at anywhere between ₹1,200 and ₹1,500 per packet as compared to the ₹800 ceiling the government has put for Monsanto's earlier generation of seeds. In other words, while the government put a ceiling on the prices of seeds—Monsanto's seed prices were cut from ₹930 per bag to ₹800 and, within this, its royalty was cut from ₹170 to ₹49—farmers were more than willing to pay for seeds that offered better characteristics. Monsanto challenged the December 2015 price control order, but there has not been even one hearing of the case so far.

While Monsanto, since mid-2015, had a dispute with seeds firm Nuziveedu that, like others, inserted Monsanto's gene into seeds it sold to farmers, for some reason, the government decided to intervene when the matter was before a division bench of the Delhi High Court. A single judge bench of the Delhi High Court had earlier upheld Monsanto's patent, but said its termination of Nuziveedu's contract was illegal—Nuziveedu not paying royalty to Monsanto and the termination of the contract was the subject of the dispute. While Monsanto challenged what the judgment said about the termination, Nuziveedu challenged the court's upholding of the patent. This is when the additional solicitor general Tushar Mehta argued that the patent was illegal; his argument was that while Monsanto had a patent on the gene, once this was inserted into a plant, it became a plant, and plants cannot be patented under Indian law. The division bench upheld this view and it is this order that the Supreme Court has rejected.

But, and here's the rub, while the judgment will be a boon to other biotech firms, especially seedtech ones, who would have had to shut shop were such patents held to be illegal, it is not clear if Monsanto will benefit. The prices of its seeds and, within this, the royalty are already under government control; for good measure, the government also introduced a proposal to cap royalty rates, though this was later withdrawn. And while Monsanto has no plans, as of now, to submit newer seeds for government approval—it withdrew its herbicide tolerant (HT) seeds from the process in August 2016—the government has made its life difficult in other ways as well. Till recently, every seed firm like Nuziveedu required an annual No Objection Certificate (NOC) from Monsanto whose job was to ensure the right processes were being followed. This was critical if Monsanto was to be responsible for any problems with the seeds. Under pressure from some seed companies, however, the government removed the annual NOC requirement; as a result, if these firms choose to not pay royalty, there is little a Monsanto can do except to file a civil suit which can take decades to resolve. In other words, Monsanto may have won the battle, but it continues to lose the war; as do the country's farmers who need better quality seeds, and more so now that global warming requires both drought- and flood-resistant seeds that biotech firms are working on.

Trai to be rational

Trai's model wrong, but DoT didn't object till now either

IT IS NOT clear whether the telecom regulator, Trai, will explain the rationale behind its spectrum-pricing recommendations to the department of telecommunication (DoT), but a report in *The Economic Times* (ET) suggests it may not do so readily. *ET* quotes unnamed Trai officials as saying that, while the law allows DoT to ask Trai to reconsider its recommendations, there is nothing that says Trai has to give the rationale behind them. In any case, Trai has maintained, as *FE* reported last month, that its recommendations did, in fact, contain the methodology as well.

That, though, is not strictly correct since, while Trai has given the valuations reached using various methodology, it has not really explained why one or the other methodology should be preferred. So, the multiple regression model yields a value of ₹3,877 crore as the per MHz base price for pan-India 1800MHz spectrum. The indexed price of the 2016 auction, on the other hand, works out to ₹3,285 crore. Given the past practice was to, by and large, use the final bid of the last auction as the base price for the next auction, this meant the distortions of the previous auctions got carried forward into the next auction—for instance, bids skyrocketed when telcos were told their licences would expire if they weren't able to win back spectrum. Trai then used what it called a producer surplus model that gave a value of ₹3,004 crore and a revenue-surplus model that gave a value of around half, at ₹1,635 crore; given both sound quite similar, it is not clear why the valuation should be so different. A production function model, the last model used by Trai, yielded a valuation of ₹1,450 crore. Apart from a detailed explanation for how each model worked and the valuation derived, Trai needs to explain why, for instance, the revenue-surplus model isn't the most appropriate or why the indexed price model that it finally used wasn't a flawed one.

It needs to be kept in mind, though, that Trai isn't the only one who got it wrong since, till now, DoT never asked for its valuation rationale of using the last bid as the next year's base price. Nor did DoT ask Trai—as it should have—for a recommendation on scrapping annual cesses like the licence fee since spectrum was not being given away free as in the past. Indeed, the only reason why DoT is now asking these questions is that, with auctions failing so often and government revenues from telecom now dipping, it is under pressure.

ExtremeCurbs

WhatsApp self-policing fraught with potential of misuse, fighting fake news needs clear set of rules and action

or personal lives. What they sometimes lack is vision, to see how these new technologies they are resisting could make their lives a bit easier. Today, technological innovations can disrupt entire industries or more. Blockchain is one such technology that is pegged to modernise digital infrastructure, thereby helping in reorganising data and assets. Across industries, blockchain solutions have become the buzzword for solving complex problems due to blockchain being decentralised, distributed, traceable, immutable, validated and verifiable. To this effect, according to the Blockchain Enterprise Survey, almost 65% of large enterprises—defined as those who employ a minimum of 10,000 staff—are actively engaged in blockchain deployment. As mentioned, though blockchain solutions are helping solve problems across industries, what we are not equipped for are the risks interlinked with these solutions.

Smart contracts based on blockchain are expected to reduce cost of transactions across industries, hence ensuring corporates and governments. Potential

AGRICULTURAL REFORMS

INCOME SUPPORT PROGRAMMES ARE TEMPORARY SOLUTIONS. IN THE LONG-RUN, REMOVING BARRIERS TO AGRI-TRADE ARE WHAT WILL HELP DRIVE UP FARMERS' INCOME

Agri-marketing is really the key

PK JOSHI

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Views are personal

RECENT STATE ELECTIONS have made it very clear that the key agenda of the coming Lok Sabha elections will revolve around the farm sector. It appears that farm loan waiving scored more weight than numerous productivity enhancement and risk reduction schemes (such as higher minimum support prices, soil health cards, irrigation schemes, e-NAM, agricultural insurance, and many others). This is despite of the fact that, at the all-India level, as high as 48% of farmers are non-borrowers, and only 23% borrow from formal sources (Situation Assessment Survey 2012-13). More strangely, 55% of marginal farmers and 48% of small farmers have no access to farm credit; and only 14% of marginal farmers and 24% of small farmers borrowed from formal sources. The puzzle is why farmers responded more to loan waiving than various programmes and reform measures. It appears that various reforms and schemes are not directly reaching most of the farmers, while loan waiving is viewed as a direct benefit that creates a ripple in favour of the farming community. Apparently, loan waiving is not a solution to solve farm problems but a psychological quick fix of the agrarian crisis.

The need is to make farm sector reforms more inclusive to empower farmers, especially the marginal and smallholders. Though the aim of all the programmes is to raise farm incomes and reduce risks, it seems that these have not converged but are disjointed, function in different silos, and reach only a select few. Therefore, these need to be packaged into one with more focus on following:

■ Consolidate farming: One of the main causes of farm distress is the nature of smallholder agriculture in India. Majority of framers in India are marginal and small. These are not only tiny holdings but also fragmented. At the all-India level, the average size of holding is a mere 1.5 acres. Such a tiny holding is not enough to generate sufficient incomes to meet the aspirations of the farming community. In the long-run, a large number of farmers need to move out from agriculture for better employment opportunities. This will call for more employment opportunities outside agriculture. This will also help in expanding per capita landholding to generate decent income. This was exactly the way agriculture in developed countries evolved and we need to learn lessons from there. In the short-term, there is a need to consolidate landholdings for farming and marketing together. The role of farmer producer organisations is important to take advantage of economies-of-scale in production and marketing. There are many successful farmer producer organisations but many more are needed to increase farmers' incomes.

> Loan waiving is not a solution to solve farm problems but is viewed as a direct benefit and psychological quick fix of the agrarian crisis

■ Improve efficiency: The government has announced higher minimum support prices of agricultural commodities by accepting the recommendations of the National Commission on Farmers. The research, however, reveals that price-led growth is not sustainable as only those framers gain who have enough marketable surplus and who can reach the market yards. Majority of small and marginal farmers have a tiny marketable surplus and they largely trade within villages at a time when the bulk of produce is harvested, resulting in a fall in prices. The focus should be to improve efficiency through improved technologies that result in higher yields and reduce input costs. During the green revolution period, productivity gains were responsible for raising farmers' income. The real prices were falling during that period. The research institutes of Indian Council of Agricultural Research have a plethora of improved technologies for different agro-ecoregions, which are paying high dividends wherever adopted. The need is to strengthen the technology delivery system by evolving mechanisms to link research centres with last-mile extensions to workers. The role of state governments is immense in strengthening the agricultural extension system, which is starved of human and financial resources.

■ Make agri-business a powerhouse: India has a comparative advantage in agriculture with the rest of the world with respect to various seasons and different agro-ecoregions. Most of the farmers are doing agriculture and they now need to move towards agri-business. They need to respond to changing demand for food. But, at present, they are responding to government-driven schemes and prices. For example, rice and wheat are getting excessive support from the government but demand for more remunerative and high-value commodities (such as fruits, vegetables, dairy products, meat, eggs, fish, etc) is growing at a fast rate. These commodities give higher, quicker and more regular returns to the farmers and suit the needs of smallholder agriculture. Earlier studies have shown a positive association between high-value agriculture and poverty reduction. To promote these commodities, the conditions for success are: (i) effective and efficient development of value chains, (ii) improved and need-based infrastructure, such as cold chains, cold storage, transportation, logistics, etc, and (iii) removing policy barriers in promoting organised wholesale and retail trade. Role of private sector will be critical in developing the required agri-infrastructure, including markets, and effective value chains of these commodities. Incentives to the private sector and stable policies will facilitate the promotion of agri-business which will eventually augment farmers' incomes.

■ Surplus management: Last year, Indian agriculture witnessed a record production of most of the commodities. This has led to a glut that has resulted in a steep fall in their prices. Such a scenario was also responsible for farmers' distress. India has now achieved food self-sufficiency and, therefore, we need a different strategy to manage the surplus and stabilise food prices at farm as well as retail level. This can be done through promoting warehouse receipts, agro-processing and exports. It will require need-based institutional reforms, infrastructure development and policy support. Warehouse receipts will help framers defer their sale immediately post harvest, when prices are at their lowest level. This will require a consolidation of farm produce, which can be successfully done through farmer-producer organisations. Agro-processing and trade will require investment in developing infrastructure. Existing agri-export zones need to be revisited and strengthened in this changing scenario.

■ Income support programme: Telangana has successfully implemented the agriculture income support programme. Odisha and West Bengal are also starting such a programme to directly support farmers to improve their livelihood. Like loan waiving, this will spread to all the states. Central government may develop a comprehensive pan-India scheme to support farmers by gradually withdrawing some of the existing schemes and subsidies to cover their expenses. The state and Centre may share the burden equally.

It is high time to facilitate the consolidating of farmers, improvements in efficiency, promoting of agri-business and strengthening of institutions that will contribute in subsiding farmers' distress. Loan waiving and income support programmes are temporary solutions towards overcoming farmers' problems. In the long-run, employment opportunities need to be created outside farming to expand farm size and increase farmers' income.

Ghosn's end comes not a moment too soon

Whether or not Nissan incurred losses is beside the point—that Nissan was even a stopgap option for its top executive's personal trading losses presents an already-flawed picture

ANJANI TRIVEDI

Bloomberg

WHERE DID NISSAN Motor Co. end and the world of Carlos Ghosn begin? It is unclear after his decades-long reign.

"I have dedicated two decades of my life to reviving Nissan and building the Alliance", Ghosn told a Tokyo court on Tuesday in his first appearance since his arrest, according to a prepared statement. He had worked "day and night, on the earth and in the air", the former Nissan chairman said. In closing, Ghosn said he was innocent of the accusations made against him.

Ghosn's innocence or guilt is for the court to decide. Still, his fate raises the question of whether his corporate tenure should have drawn to a close even earlier.

A multi-part series on "What Drives Carlos Ghosn" on the company's website and Nikkei.com—which includes his baby pictures—talks about how the executive split his time between four countries. "This kind of lifestyle can take a toll on anyone—both physically and socially. But it is what is required of many leaders in the age of globalisation", it says. Such a personal sharing by the CEO on a corporate website is rare.

The annals of CEO history are filled with stories of legendary men whose misuse of company assets precipitated their downfall. Often, the blurred line between their business and private lives lies at the heart of it. Ghosn became so personally entwined with Nissan that he ended up overshadowing the company, even after moving into the chairman role and appointing his personal choice of Hiroto Saikawa as CEO.

The longer a top executive spends at the company, it seems, the fuzzier those lines become. Consider Ghosn's explanation about why Nissan covered his collateral on personal foreign-exchange forward contracts during the financial crisis. When the executive realised he didn't have the resources to put up the amount himself, according to his statement, he was faced with a choice: either resign and use his retirement allowance, or ask Nissan to take on the burden "so long as it came to no cost to the company" as he gathered cash from other sources to pay the company back. He chose the latter. His "moral commitment to Nissan" didn't allow him to walk away because "a captain doesn't jump ship in the middle of a storm", the statement says.

Whether or not Nissan incurred losses is beside the point (Ghosn said it didn't). That Nissan was even a stopgap option for its top executive's personal trading losses presents an already-flawed picture.

Other allegations include Nissan paying "huge sums" toward Ghosn's residences in four cities around the world that weren't justified by the business, according to Japanese broadcaster NHK. It also reported that Ghosn charged travel expenses for family vacations, amounting to tens of millions of yen to a Nissan unit. These weren't addressed in the statement.

Long tenures hurt companies, too. A retrospective look at the likes of General Electric Co.'s Jack Welch shows as much. A study found that the longer CEOs are at the helm, the more reliant they become on their internal networks for information and less attuned they are to market conditions. In Ghosn's case, perhaps blindsided by the status quo, he ignored Nissan's dismal performance in recent years in its largest markets. He also seemed to have ignored the growing discontent around him.

Planned corporate successions are also rarer than you'd imagine. The rate of CEO turnover at the world's largest companies because of ethical lapses rose almost 40% from 2007 to 2011 and from 2012 to 2016. Meanwhile, the median CEO tenure at large-cap firms in the US is around five years, down from six in 2013. Research has found that replacing CEOs is good for companies. A PricewaterhouseCooper study from 2016 found that Japan and Western Europe had one of the highest CEO turnover rates—15.5% and 15.3%. Most CEO changes in Japan are planned.

The power Ghosn wielded was impressive and, to be fair, so was his commitment. Yet, as we've written before, the company had one of the worst corporate governance records in Japan during his oversight. Critics say this is a reality of Japan Inc. If Carlos Ghosn was such a hard-hitting, internationally renowned executive who did things differently, shouldn't he have been able to change that?

It is unfortunate Ghosn departed this way. Perhaps shareholders can extract a lesson in the dangers of letting a legendary leader stay too long.

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LETTERS TO THE EDITOR

Playing to the gallery

The Union government's decision to amend the Constitution to provide a 10% reservation for the economically weaker sections in government jobs and admissions to higher educational institutions is nothing but a ploy to play to the gallery. The 10% reservation will be over and above the existing 50% quota set aside for SCs, STs, and OBCs. The move could have far-reaching political ramifications coming as it does with only 100 days left for the next Lok Sabha election and could make or mar the BJP's prospects. Some opposition parties have rightly termed the move as a political gimmick and it remains to be seen if it will pass judicial muster

— Ravi Chander, Bengaluru

A win down under

India has achieved the near-impossible—winning a test series against Australia in Australia. The maiden win, hailed as the best and biggest ever, has sent the Indian fans into raptures. Up-and-coming young players like Cheteshwar Pujara, Rishabh Pant and Jasprit Bumrah need special mention for their absolutely superb and match-winning performances fetching individual glory for themselves and national glory for India. The two teams were evenly matched and the matches that were far from one-sided treated us to a superb display of cricket. The test series triumph is certainly something for us to rejoice and be proud of. It is no surprise that the nation has erupted in joy over the boys in blue

— G David Milton, Maruthancode

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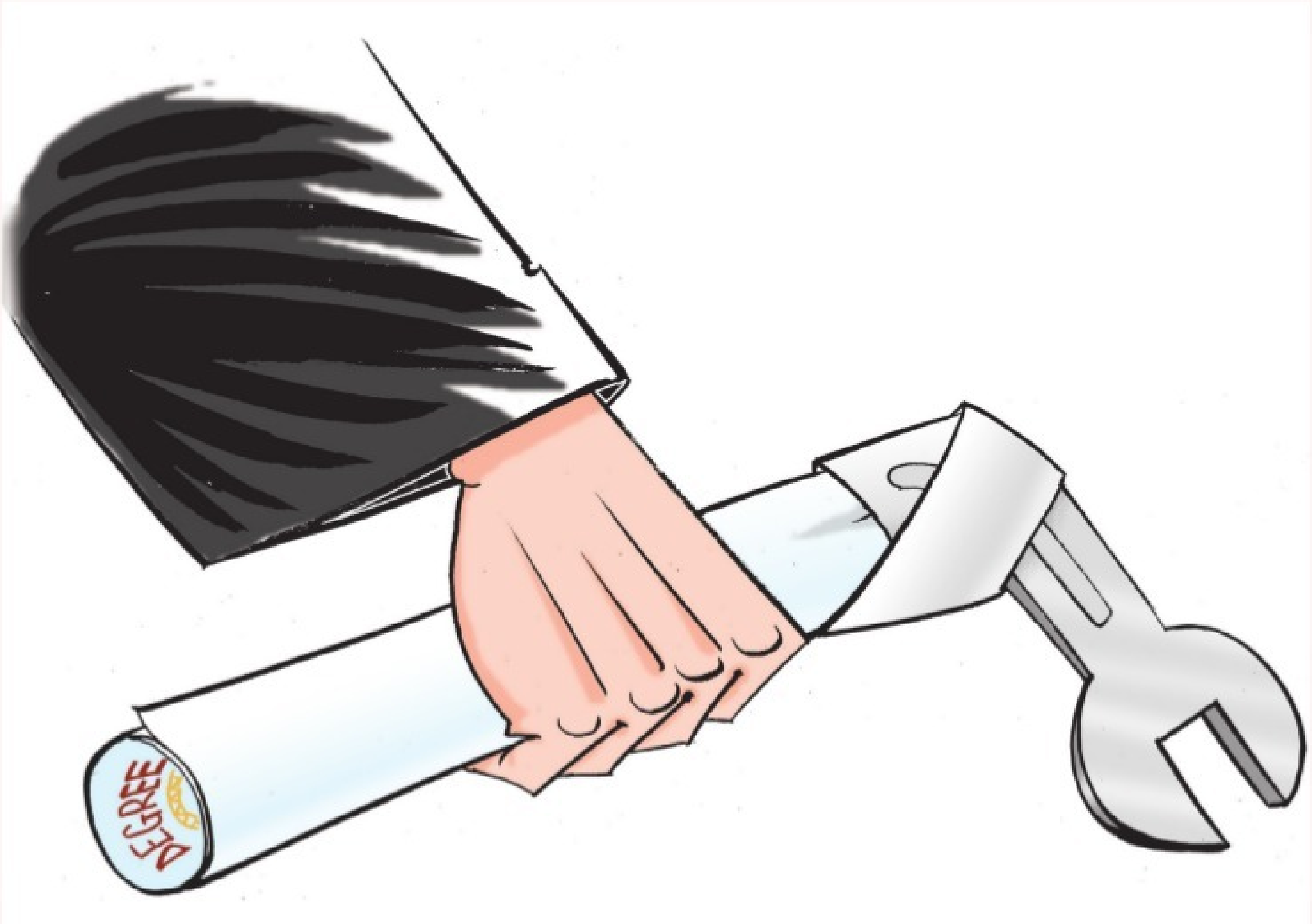

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SANTOSH MEHROTRA & JAJATI PARIDA

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Numbers don't lie: There is a real jobs crisis

Surjit Bhalla's claim that "a large part of the so-called jobs crisis is because of demand for government jobs, not jobs per se" is without foundation. The NEETs have grown by a massive 20 million in just four years (2011-12 to 2015-16). Plus, there is the 10 million actual increase in the labour force. Just over four years, India should have created at least 7.5 million new non-agri jobs each year (which India had managed to create over 2004-05 to 2011-12); it actually created only 2.2 million

WE ARE REPEATEDLY told by government economists that there is no jobs crisis. Surjit Bhalla, till recently part of the PM's Economic Advisory Council, noted not to worry about slow growth of jobs, based on his employment estimates ('Gender equality & government jobs', *FE*, January 5; *goo.gl/pL4CMA*).

People work, but don't have enough work to survive (let alone save for old age) on one source of livelihood, so they have at least one 'principal' means of livelihood, and one or more additional 'subsidiary' employment. Hence, Indian labour force surveys give us estimates of both principal and subsidiary status employment. Together, they constitute what is called the usual principal and subsidiary status employment (UPSS). A foremost problem in Bhalla's calculations is reliance only on principal status employment, and the omission of subsidiary status, in his calculation of employment, labour force and unemployment figures. His estimates understate the size of India's labour force and are generally misleading.

Estimates based on both principal and subsidiary status suggest the following (see the accompanying table).

The overall labour force (LF) is not growing at 12 million per annum. Never in India's history (except 1999-2000 to 2004-05 due to a baby boom in the early 1980s) has the LF grown by 12 million. So what appears to Bhalla like a discovery, most labour economists in India should have known for at least seven years.

Instead, it had grown by 2.1 million per annum during 2004-05 and 2011-12, and about 2.4 million per annum during post 2011-12 periods. The sharp supposed 'fall' in jobs that Bhalla finds post-2004 is actually on account of a sharp increase in school enrolment (which he recognises).

The volume of open unemployment was almost constant at around 10 million until 2011-12, but (what Bhalla is innocent of is that) it increased to 16.5 million by 2015-16. Increased open unemployment post the 2011-12 periods suggests that those in education prior to 2011-12 would start searching for non-agricultural jobs—but did not find them.

Worse still, it shows up in a sharp increase in unemployment rate (UR) of the educated (based on our estimates of Annual Survey, Labour Bureau). The UR rose over 2011-12 to 2016 from 0.6% to 2.4% for those with middle education; 1.3% to 3.2% for class 10 pass; 2% to 4.4% for class 12 pass; 4.1% to 8.4% for graduates; and 5.3% to 8.5% for post-graduates. Even more worrying, for those with technical education, UR rose for graduates from 6.9% to 11%, post-graduates from 5.7% to 7.7%, and for vocationally trained from 4.9% to 7.9%. The more educated you are, the more likely you will be unemployed.

Bhalla has argued that "during those seven UPA years (2004-05 to 2011-12), only 10 million jobs were provided, or just 1.4 million per annum." Earlier, Bhalla claimed ('Politics and fake GDP analysis', FE, December 1, 2018; https://goo.gl/rQPZhm) that "...the lowering of GDP growth for 2004-05 to 2011-12 was entirely expected. Primarily because of the surprise (sic) low employment growth between 2004-05 and 2011-12." For 2004-05 to 2011-12, he erroneously claims that NSSO data "reveal" a total job gain of "only 9 million."

Bhalla seems to believe all kinds of jobs, including in agriculture, are 'jobs' to be valued. For an economy at India's stage of development, an increase of workers in agriculture (that took place over 1999-2004) is a structural retrogression—in a direction opposite to the desired one. Between 2004-05 and 2011-12, the number of workers in agriculture fell sharply, which is good—for the first time in India's economic history. Until then, the absolute numbers working in agriculture had increased (even though the share of employment in farming was falling, slowly). Similarly, youth (aged 15-29 years) employed in agriculture fell from 86.8 million to 60.9 million (or at the rate of 3 million per annum) between 2004-05 and 2011-12. However, after 2012, youth in agriculture actually increased to 84.8 million till 2015-16 and even more since then (as CMIE data would attest). Bhalla is clearly innocent of such nuances. Job growth is lower in recent years than over 2004 to 2014.

Let us now deal with Bhalla's claim that only 1.4 million jobs were provided during 2004-05 to 2011-12 (or just <10 million total). Yes, that is true only if you deduct from total job growth in all sectors, those leaving agriculture (less agri-workers is a good thing for the workers, agriculture and economy as a whole). What really matters for India at our stage of development is the growth in non-agricultural jobs. During that period, 51.2 million non-agri jobs were created, or 7.3 million per annum.

By contrast, post-2012, only 1.2 million per annum (or 4.8 million total) non-agricultural jobs were created until 2015-16, and then 1.75 million (3.5 million total) are likely to have been created (all other things remaining the same) till 2017-18.

What is most worrying is that manufacturing jobs actually fell in absolute terms, from 58.9 million in 2011-12 to 48.3 million in 2015-16, a whopping 10.6 million over a mere four-year period. This is consistent with the slowing growth in the Index of Industrial Production (IIP, which consists of manufacturing, mining, electricity). IIP had risen from 100 in 2004-5 to 172 by 2013-14 (in the 2004-05 series), and from a base of 100 in 2011-12 in the later series to 107 in 2013-14, but only rose to 125.3 in 2017-18. Slower industrial production recently is also suggested by other indicators (slower credit offtake, lower plant load factor). Declining manufacturing jobs is indicative of stalled transformation of the Indian economy.

What is tragic is the growing number of educated youths (age 15-29 years) who are "Not in Employment, Education and Training (NEET)". This number (which was 70 million in 2004-05; see table) increased by 2 million per annum during 2004-05 and 2011-12, but was growing by about 5 million per annum from 2011-12 to 2015-16, and if that later trend continued (as there is evidence it has) we estimate it would have increased to 115.6 million in 2017-18.

These NEET and unemployed youths together constitute the potential labour force, which can be utilised to realise the demographic dividend in India.

Bhalla's claim that "a large part of the so-called jobs crisis is because of demand for government jobs, not jobs per se" is, therefore, without foundation. There is a real crisis. Also, the NEETs have grown by a massive 20 million in just four years (2011-12 to 2015-16). Plus, there is the 10 million actual increase in the LF. In other words, just over four years, India should have created at least 7.5 million new non-agricultural jobs each year (which India had managed to create over 2004-05 to 2011-12); it actually created only 2.2 million. This is not counting the new non-agricultural jobs needed for agricultural workers wanting to leave agriculture; this number fell as construction growth fell sharply in the last few years.

Employment, unemployment, labour force and NEET (UPSS)

Employment and unemployment estimates	2004-05	2011-12	2015-16	2017-18*
Agriculture	266.2	230.4	225	222.4
Manufacturing	53.1	58.9	48.3	44.1
Non-manufacturing	29.6	55.2	61	64.2
Service	107.5	127.3	140.8	148.4
Total employment	456.5	471.8	475.2	476.9
Unemployed	10.7	10.3	16.5	21.8
Labour force	467.2	482.2	491.7	496.6
NEET (Age group 15-29 years)	70.3	83.9	103.3	115.6

Note: Estimates for the year 2017-18*, are projected figures under the assumption that all else remains unchanged. NEET = Not in education, employment or training.
Source: Authors estimation using NSS and LB unit data

BLANKET DRUG PRICE CAP

How it does more harm than good

PRAVEEN CHANDRA

Chairman of Interventional Cardiology, Heart Institute, Medanta-The Medicity

The dream of quality healthcare, with blanket price cuts, seems distant

INDIA AIMS TO to provide "affordable healthcare to all" by pursuing landmark reforms. In one such initiative, the National Pharmaceutical Pricing Authority (NPPA) fixed prices of drug-eluting stents (DES) and bare-metal stents (BMS) at ₹27,890 and ₹7,660, respectively. Does fixing prices make healthcare affordable? Yes. But is affordability all the Indian healthcare system needs?

The bigger picture: We must not forget that the Indian medical industry comprises only 1.7% of the world market. We are still significantly import-dependent. When the government capped prices of heart stents, high-end stents by leading global medical device companies started disappearing from the shelves. Where does that lead us to? A policy that deters foreign investment in this market does more harm than good. The two practices—fostering innovation and slashing prices—do not meet the goal of accessibility of quality healthcare. It leaves a patient in a confused state whether to be ecstatic or worried about the price cuts? Moreover, I find it quite shocking that we now have a blanket price for all kinds of stents, even though they vary as per the quality and patient needs. Before capping such an integral product in the medical sector, we should understand the basics.

Are all stents the same?

No. They vary as per safety, efficiency and deliverability in line with different patient needs. For instance, low-end and middle-end stents are used for simple blockages. But for complex blockages and for high-risk patients, we need high-technology stents.

A blanket price for cardiac stents is restricting the entry of quality and innovation in the market. I fear that patient safety is at stake with optimum quality stents disappearing from the domestic market.

Although the intent to make healthcare affordable is noble, it cannot substitute the pressing need of the hour—access to superior quality medical devices for better patient outcomes

Addressing the changing patient profiles

As no two stents are suitable for the same cardiac condition, why should their individual merit be capped in the same category of prices? New generation stents come with cutting-edge technology and target patient-specific needs; DES are coated with drugs to prevent re-narrowing of arteries. Depending on thickness, some stents are designed to give more radial strength for tough regions where stent expansion is key to ensuring long-term success. On the other hand, thinner stents can easily reach any part of the vessel and are comparatively less invasive.

Price-capping categorised all stents (both branded and unbranded) into a "one-size-fits-all" principle. This approach is not suitable for treating diverse patient profiles. Although the intent to make healthcare affordable is noble, it cannot substitute the need of the hour—the access to superior quality medical devices for better patient outcomes. As a doctor, I believe that fostering innovation took a nosedive when global research-based companies were forced to withdraw superior quality stents from the market. For instance, a covered stent can be expensive, but prevent complications like dysfunctions in an emergency procedure. Unfortunately, it has disappeared from the market after price capping.

Achieving access to healthcare is one thing, achieving access to superior quality healthcare is quite another. At a time when the world is adopting newer technologies to treat coronary artery diseases, we must invest in innovations rather than stalling a patient's right to choose a stent best suited for their condition. In the current scenario, the dream of quality healthcare, with blanket price cuts, seems distant. Price cuts can have exponential drawbacks on the road to patient safety and innovation. We need a conducive environment, where all stakeholders join hands and work towards keeping the dream of access to superior quality healthcare alive—an environment where policy decision should be based on the value of superior quality of technology. Healthy competition among medical device manufacturers would benefit patients with reduced costs. What we need is quality and efficacy, more than blanket price control.

A framework for auditing blockchain

It's a must in today's digital and interconnected world

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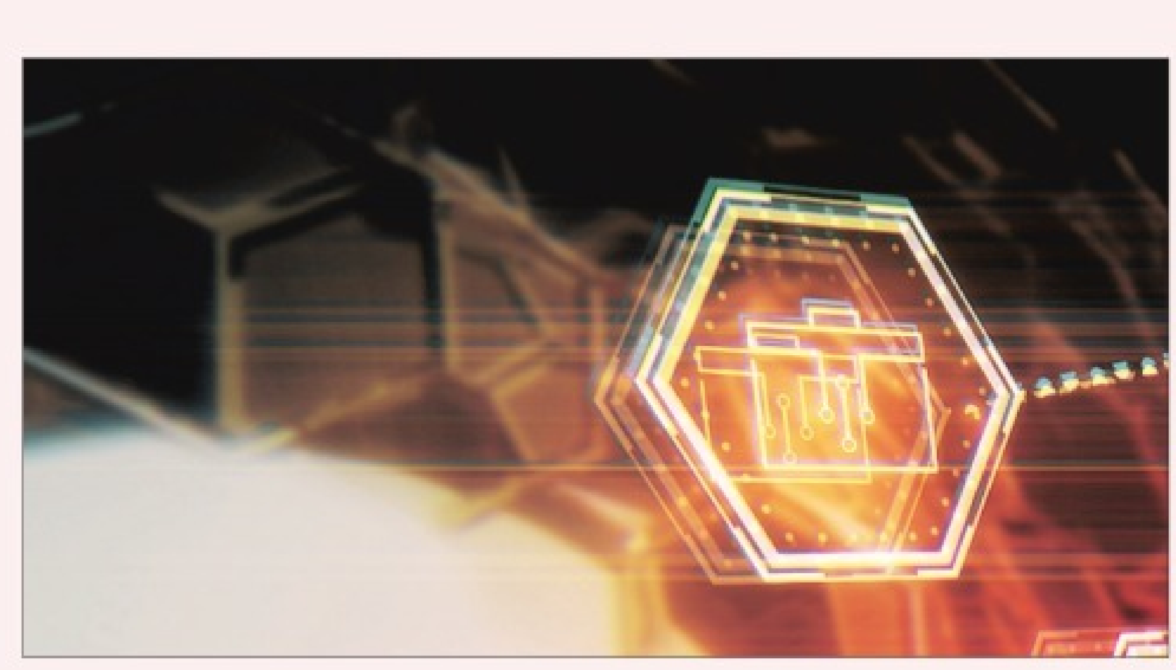
ONE HAS TO RECONCILE with reality. People, in general, are sceptical towards technological changes, be these in their professional or personal lives. What they sometimes lack is vision, to see how these new technologies they are resisting could make their lives a bit easier. Today, technological innovations can disrupt entire industries or more. Blockchain is one such technology that is pegged to modernise digital infrastructure, thereby helping in reorganising data and assets. Across industries, blockchain solutions have become the buzzword for solving complex problems due to blockchain being decentralised, distributed, traceable, immutable, validated and verifiable. To this effect, according to the Blockchain Enterprise Survey, almost 65% of large enterprises—defined as those who employ a minimum of 10,000 staff—are actively engaged in blockchain deployment. As mentioned, though blockchain solutions are helping solve problems across industries, what we are not equipped for are the risks interlinked with these solutions.

Smart contracts based on blockchain are expected to reduce cost of transactions across industries, hence enticing corporates and governments. Potential application of blockchain is not just limited to finance, it ranges across a variety of sectors, right up to making an agricultural supply chain more efficient. Today, businesses around the globe, from big to small across each industry, are spending significant time and resources on blockchain solutions. Governments across the world, too, are now leveraging blockchain and the many advantages it has to offer.

That blockchain technology presents major opportunities for several sectors is rather apparent; however, it is not a foolproof technology. Still at a nascent stage of deploying blockchain, many organisations across industries are unaware of growing threats that can impact its security. Recent incidents such as Parity hack, Enigma hack, Decentralised Autonomous Organisation (DAO) incident and Bitfinex breach have made it clear that attackers can exploit this technology.



For example, in the healthcare sector, blockchain technology can be used to streamline the sharing of electronic medical records between patients and healthcare providers. Here, unencrypted personal health information (PHI) published in global transactions may put the sensitive information at risk, leading to regulatory and legal concerns. Also, access to medical records requires a patient's private key, and as the patient is the only owner of the key, losing it implies losing access to the entire medical data. Furthermore, blockchain technology's irrevocability makes it difficult to implement the 'Right to be Forgotten', hence a patient would not be able to have the right for the erasure of his/her PHI. Such a scenario calls for an audit framework comprising: key generation and decommissioning, maintenance and governance, logging and auditing of key usage, management infrastructure, traceability and version control, and hash algorithm management.

Also, there are risks pertaining to commercially sensitive data transactions on blockchain platform. For instance, on a public blockchain in supply chain, any member of the public can obtain a full copy of the whole transaction history and use it without restriction. In case of a private blockchain, the information is shared among all the participating nodes, but if competitors are present on the same blockchain, they may be able to discover the commercial-in-confidence information stored in the blockchain platform, thus putting sensitive data at risk. Lack of a governance model for blockchain, therefore, may lead to unresolved disputes over incorrect transactions or cross-border transaction flows.

Other concerns remain with respect to ownership, governance, dispute resolution, security and privacy around smart contracts, and the blockchain-based platforms themselves. The risks are amplified due to the absence of a central regulator or governing body to deal with disputes when they arise. Traditional models of audit fail to take into consideration many of the risks associated with blockchain-enabled processes, and hence the need for understanding the specific set of unique risks and development of an evolved auditing approach specifically for blockchain-enabled solutions.

To sum up, as blockchain continues to build significant momentum and the reality sets in, organisations cannot turn a blind eye to security and risk management any longer. While business executives are leading the way in utilising blockchain, they simultaneously need to re-examine processes and functions that have remained static for decades. Leveraging an effective audit framework could provide a solution to harness and mitigate a number of the unique risks that blockchain brings to the table.