Opinion

MONDAY, AUGUST 19, 2019

A TALE OF TWO UTs

Chief minister of Uttar Pradesh, Yogi Adityanath

A new path has been paved for the Kashmiri brothers and sisters and Kashmir and Ladakh are now going to script a new tale of development.

RationalExpectations

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Can India learn from Vietnam?

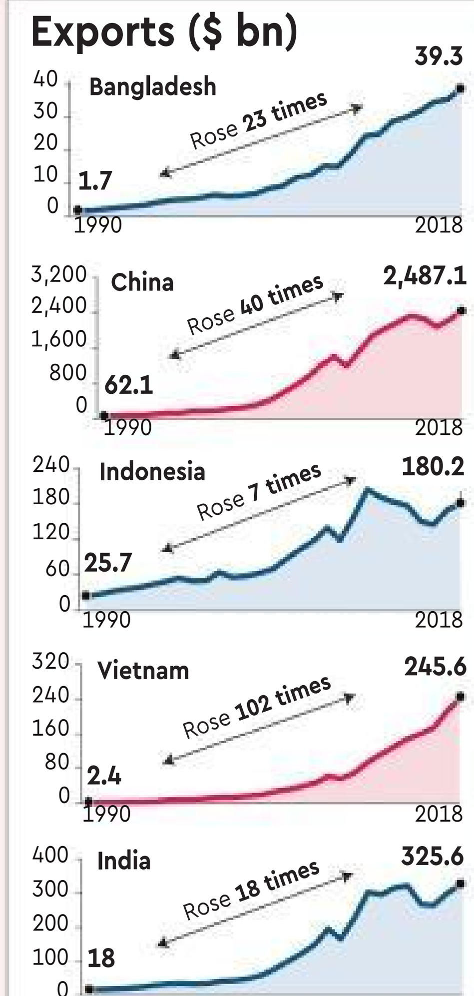
Catching the textile, and later electronics boom, ensured its exports rose from 6% of India's in 1960 to 75% in 2018

INDIA'S EXPORTS-GROWTH appears to have picked up in July, when they rose 2.3%, but for the last four years, it has averaged just around 0.2% which, it turns out, was a just a third of global trade growth in the same period; in the previous four years, from 2010 to 2014, however, global exports grew 5.5% a year while India's exports rose by 9.2% per year. This slowing of India's exports—and the relatively poor growth before that—is really bad news, given that countries like India, who have a very small export base, should be growing many times faster than the global average (*see graphic*).

Even China, whose exports are 7.5 times India's, managed to grow at 1.5% per year in 2014-18; Vietnam, which is rapidly emerging as an export powerhouse, taking up the slack in markets being vacated by China, managed to grow by a whopping 13% per year, from \$150.2 bn in 2014 to \$245.6 bn in 2018. As a result of this sustained growth, Vietnam's exports, which were a mere 6% of India's in 1960 and 13% in 1990, managed to reach 34% in 2000 and a whopping 75% in 2018; at this rate, within a few years, they could even outstrip India.

At a time when India's economy is flagging, as is investment and consumption, and rapid exports-growth is the only way out of the morass, India would do well to learn from Vietnam. When China started vacating the market for textiles and moved on to higher-value exports, it was countries like Vietnam and Bangladesh that made the most of this and, today, when big electronics producers—including those producing mobile phones—want to de-risk and move part of their production out of China, it is once again Vietnam that is looking to take away the bulk of this.

Exports ($ bn)



Textile/shoes ($ bn)	2010	2018	Electronics* 2010	2018
India	4.9	33.1	1.6	8.1
Vietnam	16.3	46.7	3.6	79.5

*Including mobiles

The way that Vietnam has achieved this has been to aggressively liberalise its economy by lowering tariffs as well as attracting foreign investments; in 1995, Vietnam joined the Asean free trade area, it signed an FTA with the US in 2000 and in 2018, it joined the Trans-Pacific Partnership (although without the US). Today, its tax levels are amongst the lowest in the world and, as several top electronics companies with manufacturing/export bases there will testify, it is willing to go more than the extra mile to ensure investors get what they want in terms of infrastructure etc. Indeed, in 2018, data from the Vietnam government website says that 71% of exports took place in what is called the "FDI sector"; that is, by global firms setting up shop in Vietnam.

As a result of this, in 2010, textiles and shoe exports comprised 22% of Vietnam's exports; traditional exports like sea food, rice, crude oil, rubber and wood comprised 26% of the total, while electronics was a mere four percent. In 2018, the share of textiles and shoes were down a bit to 19%, that of traditional exports was down to 10%, while electronics including mobile phones was up to a third.

Given the tremendous opportunity posed by the US-China trade fight and the fact that top producers want to de-risk their operations—60% of the \$300 bn market in global exports of smart-phones take place from China—this is a great opportunity for India. But, as this newspaper has detailed earlier, Vietnam has stolen a march over India and already accounts for over 10% of global exports of mobile phones while India's exports are miniscule; though Vietnam's production of mobile phones was around a fourth that of India as late as in 2010, the production levels are almost the same today though the per unit price of Vietnamese phones is much higher

Since the bulk of the smart-phone exports are made by four or five companies—Apple and Samsung alone account for around 60% of all smart-phone sales across the world—India's best bet is to ensure that they relocate as much of their operations as possible from China. Right now, since mobile phones are 'assembled', and not really 'manufactured' in India, even as phone production rose, imports are rising to alarming levels; in the next 5-6 years, these could be India's second-largest imports.

Apart from the fact that Vietnam offers better quality infrastructure, as our front-page story points out today, while corporate tax rates for large manufacturing plants in Vietnam range from 10 to 20%—Indian rates for foreign companies are 43.68%—some big global manufacturers have managed to get even better deals. Given that 70-75% of global trade today takes place through 'value chains' administered by multinational firms, if India isn't a part of this—for most manufactures, not just mobiles or electronics—its exports can never take off.

FemSTEM

The Lancet is making a concerted push towards correcting the gender imbalance in STEM research

GIVEN THE SYSTEMIC gender bias in STEM research, *The Lancet* group of journals announced a Diversity Pledge and a new 'No All-Male Panel'—or 'manel'—policy. The move aims to increase the representation of women, people of colour, and colleagues from the Global South among the journal group's editorial boards/advisors, peer reviewers, and authors. Further, in its 'manel' policy, *The Lancet* states that its editors shall "not serve as panelists at a public conference or event where there are no women on the panel," and that, for events organised or planned by *The Lancet*, the aim, going beyond merely having female moderators, is for at least half the panel to be constituted of female speakers.

Accoridng to a UNESCO report, as of 2015, only 28.8% of STEM researchers globallly, and 13.9% in India were women. Cultural stereotypes pose severe barriers for women's entry into the sciences—for instance, only 29% of female students in India are enrolled in a BTech course, as per the All India Higher Education Survey (AISHE) 2017-18. Challenges abound in retaining women in science research too. The same report found that only 6% of the women enrolled in these courses opt for a PhD—reasons like marriage and maternity often cut short their educational pursuit. Gender disparity is the highest in fields like Computer Science or Physics while it is least in the life sciences and medicine. With the World Economic Forum estimating that approximately 90% of future jobs will require some level of information and communication technology skill, and the fastest growth in jobs being in the STEM fields, continued exclusion of women from science is unacceptable and economically unsound. Not only do efforts need to be made to attract more female talent to the sciences but also workplace policies—on pay, sexual harrassment, flexxi-schedules for working mothers—need to be modified to encourage retention of female science professionals.

FROM PLATE TO PLOUGH

MODI 2.0 HAS THE POLITICAL MANDATE TO SEE THROUGH THE LIBERALISATION OF INDIA'S RESTRICTIVE LAND LEASING LAWS, AND THEREBY ATTRACT INVESTMENTS IN AGRICULTURE

Free up land-lease markets

ASHOK GULATI & RITIKA JUNEJA
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Views are personal

EARLY ON IN its second term, on July 1, 2019, the Narendra Modi government (Modi 2.0) constituted a High Powered Committee of Chief Ministers for "Transformation of Indian Agriculture", with Devendra Fadnavis as its convenor. The Committee is supposed to submit its report within two months. The Committee's terms of reference (ToR) largely focus on agri-market reforms ranging from agricultural produce and livestock contract farming and Services Act of 2018 to Essential Commodities Act (ECA) and e-Nam etc. On the supply side, it does talk of quality seeds and farm machinery etc, but relatively, the emphasis seems much more on getting the markets right. We very much welcome this approach as we feel that agri-market reforms is a low hanging fruit; we highlighted in this very newspaper the need for setting up an Agri-Markets Reforms Council on the lines of GST (*bit.ly/2KQQrAN*).

However, to transform agriculture in the medium-to-long run, there is a need to undertake some fundamental reforms in land institutions too. This is missing in the Committee's current ToR. But, it can be considered under any other issue that helps transform agriculture. It may be worth recalling that the Modi Government in its first term (Modi 1.0) had set up an expert committee on land reforms, chaired by T Haque, which recommended a Model Land Lease Act (2016). It is high time for this High Powered Committee of Chief Ministers to take it up for implementation. Better late than never.

There are two fundamental reasons why there is urgent need to liberalise land lease markets. First, the average holding size has been declining in India for long (see graphic), raising questions about its economic viability in earning a respectable level of income for the family. Second, restrictive tenancy laws have generated oral (informal) tenancy that is said to have a much higher magnitude than formal tenancy, and is adversely impacting efficiency of land use.

As per NSSO records for 2013-14, only about 10% of agricultural land is under tenancy, down from 20% in 1953-54 (see graphic). However, experts believe that official estimates hugely under-report the actual tenancy. It is generally believed, based on several micro-level surveys, that about one third of agricultural land is under tenancy. It is these oral tenants that are most insecure. Neither do they have legal sanctity nor do they get recognised as farmers, which keeps them deprived of institutional credit, crop insurance, government-sponsored social benefit schemes and relief support. The fear of eviction also disincentivises them from making any long-term investments in land improvement, resulting in low capital formation and, thereby, low farm productivity. Even land owners suffer from the fear of losing their ownership rights, if they lease out for longer terms. As a result, many of them prefer to keep their lands fallow. Rough estimates suggest that about 17 million hectares of cultivable land is lying fallow.

In this context, it may be worth noting that China has lately revised its land lease laws, where farmers can lease out their land even to corporate entities for cultivation for up to 30 years. Such a move can help attract long-term investments in high value crops, such as orchards.

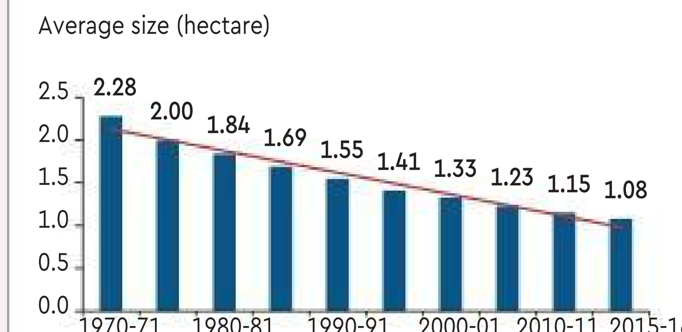
One reason for landowners' fear of losing land due to long-term leases is the absence of tamper-proof land records with the revenue departments. So, one of the lowest hanging fruits is to digitise and geo-tag land records, and link them with farmers' Aadhaars and even bank accounts. This will create a centralised, transparent and easily assessable land records system in India. It can then help any class of farmers operating on a piece of land to access bank credit, crop insurance, etc. Though efforts are underway, the achievement is still far from satisfactory. Only three states (excluding UTs), viz. Odisha, Sikkim and Tripura, have achieved 100% computerisation of land records, while many others have computerised 80-95% of land records. Liberalising land lease markets, with computerisation of land records and geo-tagging of farms, though challenging, can give a high pay-off, with enhanced capital formation and even linking crop insurance to that platform.

In this context, one may recall Andhra Pradesh's Land Licensed Cultivators Act, which demonstrates a suitable channel to deliver loan, subsidy, crop insurance, relief support, etc, by issuing loan eligibility cards to tenants, who raise crops with the explicit or implied permission of the owners. Kerala's Kudumbashree initiative, too, is another innovation that is making strides in poverty eradication and women empowerment. The group land leasing by Joint Liability Group (JLG) under Kudumbashree is a drive where women formed into JLGs are cultivating leased-in land with assured access to agricultural credit from NABARD and other banking institutions, increasing their returns from farming. Therefore, both Andhra Pradesh's and Kerala's innovative institutional experiences suggest a key lesson for policymakers to liberalise the restrictive land leasing laws in the country, while fully protecting the rights of the owners.

These reforms in land markets have been lingering for a long time due to lack of political will. But Modi 2.0 has the political mandate to get it through, if it is put on the priority list for reforms to transform Indian agriculture. We feel this is the most opportune time for the High Powered Committee of Chief Ministers to take it up and, once and for all, carry out fundamental structural reforms in the institutions (rules of the game) governing land markets. Can they do it? Only time will tell.

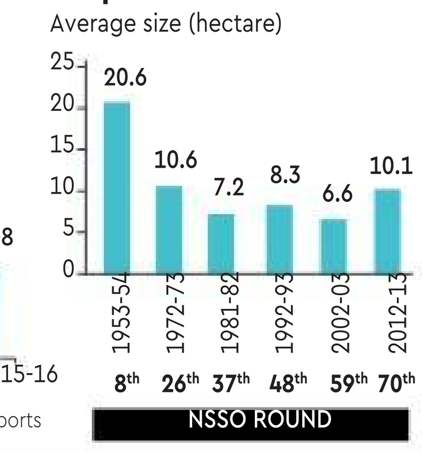
Average size of operational holdings as per different Agriculture Census

Average size (hectare)



Proportion of leased area

Average size (hectare)



Source: Agriculture Census, 2015-16 and various issues of NSSO Reports

Back to Hindu rate of growth?

With the global economy slowing down, and economic concerns having taken a back seat under Modi 2.0, a slowdown in India's growth, too, may be expected

MEGHNAD DESAI
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Views are personal

A LOT OF debate during the five years of the previous government was around a 7% growth, give or take a few basis points. It seemed then that India had achieved 7% as a default option, though doubts were raised about the estimates by Aravind Subramaniam. He had failed to find the inputs associated with growth at a sufficiently high level to justify the growth estimate. The jury is out.

Even so, the ambition of doubling GDP size from \$2.5 trillion to \$5 trillion in seven years has been adopted. Yet, the course of the economy during the last two quarters, for which we have estimates, belie the hope that India can chart a steady growth path to \$5 trillion, unless drastic action is taken. So far, there seems to be no urgency on the government's part to correct the temporary fall in growth rates. The Budget took the view that no short-run stimulus was needed. It kept the level of personal taxation high and raised various indirect tax rates.

The way to understand this lack of urgency is political. Politically, one can view the BJP under Modi's leadership as a coalition of two powerful forces. The ideological core of the BJP cares nothing about economics. It wants to build a Hindu Rashtra and along that path, they have marked goals such as Ram Mandir, Gau Raksha, Hinduisation of the education curriculum, putting Hindi above English as national language, etc. This ideological package has been there since the 1980s and got the BJP 182 seats at most.

Narendra Modi brought a growth and technological modernity narrative from Gujarat to the BJP. He has a global vision, is environment friendly and willing to cast the BJP net wider to include Dalits, women and other deprived groups. It was this strategy that won the extra 100 seats in 2014, which gave BJP a single party majority.

During 2014-19, the ideological section was kept back. No temple, no cultural change, but growth was the focus. After re-election, it seems economics has taken a back seat and politics is in command. So, educational legislation entrenching the role of Hindi has been a priority. Article 370, the oldest commitment from the Jan Sangh days, has been dealt with. No doubt Ram Mandir will follow soon as the Supreme Court is hearing the case at breakneck speed.

Could it be that the compulsions on Modi 2.0 are cultural rather than economic? Or is it the case that India does not have the foundations for a sustained high—7/8%—growth rate? Once the talk was of demographic dividend. Now, the prime minister, speaking from the Red Fort, expresses concern about population growth. Are the constant weaknesses of Indian economy resistant to reform?

> **India is a rare polity in having no political party that is openly pro-business. The normal Right-Left division is along religion/culture lines**

The numbers available over the last 70 years are revealing. The first thirty years, 950-1980, GDP growth numbers average 3.5%. The next 23 years, 1989-2003, give us 5.5% as a rough average. In the 21st century, the Indian economy achieves 8.7% in 2003-08, 7.7% in 2008-12 and 6.9% in 2012-18. Thus, there is a low growth equilibrium of 4-5% for the first fifty years and of 7-8% for the last twenty years.

These last twenty years have coincided with globalisation and India had prepared itself to benefit from it, thanks to Rao-Singh reforms. But, the global economy has slowed down. India benefited more from service sector growth, thanks to cyber business, than industrial growth. From 1997 onwards, the growth rate of services has exceeded that in industrial output in all years. Agriculture has continued to be the slowest growing sector through the seventy years.

Thus, the economy remains predominantly a service economy. While there has been industrial growth, it has not been the driver of the economy. The reasons are well known in terms of labour market strangulation by misguided legislation in the socialist decades as well as high cost of land. Credit, too, has been high-cost since bank nationalisation created an inefficient and corrupt banking sector. The alternative non-banking financial sector has just imploded. The difficulty for the creditor to collect debts has just recently been a subject of reform, but even that reform seems to have stalled.

The global economy is slowing down. We may even be entering a recession. So, India slowing down may be expected. The real worry, however, is that the ideological section of the BJP not only rates growth as a low priority but may actually be hostile to it. India is a rare polity in having no political party that is openly pro-business. The normal Right-Left division is along religion/culture lines and not state versus market lines. The higher taxation at the top income brackets (consisting of only 5000 super rich), the continuing tax terrorism indicates an anti-business culture. The economic ideologues in the BJP, such as the Swadeshi Jagaran Manch, do not like FDI. The Hind Mazdoor Sabha would not support any labour market reform which was business friendly. Their priority is agriculture not industry.

Back to Hindu rate of growth?

LETTERS TO THE EDITOR

The blameless victims of Kashmir

Nobody can gainsay that life has become harder for the people of Kashmir Valley in the wake of the abrogation of Article 370 by the central government. The Kashmiris are suffering for no fault of theirs. The administration is still to actualise the promised relaxation of restrictions. With no tourists around in the popular holiday destination, the local residents are deprived of a major source of income. Confined to their houses, the people must certainly be running short of essentials. They must be leading a hardscrabble life. It won't be a happy experience for them to live under constant curfew, enforced by legions of troops. Today, the Valley is the most militarised region in the world, with nearly a million troops. With the shutdown of telecommunications and internet, the people are cut off from the rest of the world. Reporters are not able to gather information. Spare a thought for Kashmiri children who sit at home instead of in school. If we are truly altruistic or patriotic, we must imagine ourselves in the place of Kashmiris and empathise with them. We should ask why the Kashmiris should lose their land and culture, which they are going to, consequent to the abrogation of Article 370. If they are Indians and our compatriots, we should be able to do without leaving them in the lurch. Whether the revocation of autonomy was intended to gobble up the Valley or not, it was certainly not a move to affirm the right to self-determination of the people of Kashmir. TV anchors imbued with Hindu nationalism should open their eyes to the gun-wielding troops and barricades, empty streets and shut shops in the Valley and tone down their bellicosity, sabre-rattling and jingoism.

— G David Milton, Maruthancode

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R.N.I. Reg. No. 6188/61 Printed for the proprietors, The Indian Express (P) Ltd by Vaidehi Chintaman Thakar at The Indian Express (P) Ltd Press, Plot No. EL-208, TTC Industrial Area, Mahape, Navi Mumbai-400 710 and published from Express Towers, Nariman Point, Mumbai-400 021. Editorial & Administrative Offices: Express Towers, Nariman Point, Mumbai-400 021. Phone: 22022627/67440000. Fax: 022-22856323.
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REGULATING INTERMEDIARIES

From 'safe harbour' to 'rocky shores'?

As India continues to ascend greater heights to establish its place among world leaders, we need to be extremely savvy with how we regulate this generation's most valuable asset—free-flowing data and information. If we want to promote homegrown businesses and global investments, we must create the environment to receive them—and the intermediaries that facilitate data flow

DON'T SHOOT THE messenger" is a well-accepted admonition—it's been around since even before the age of Shakespeare. A messenger's role has always been to deliver communication from an origin to a destination, without tampering with the content. A messenger acts as an intermediary. In this digital era, intermediaries are any online platform that connect users together. This encompasses a vast pool of organisations including news aggregators, Twitter, YouTube, food delivery apps, taxi aggregators, telecommunications companies, and even Quora, Reddit and more. Any platform that enables point-to-point communication and crowdsourcing of content is an intermediary.

Keeping this role of intermediaries as mere 'facilitators of communication' in mind, the Indian Information Technology (IT) Act of 2000 wisely incorporated provisions for 'safe harbour' of intermediaries, or digital messengers of communication. This excellent decision ensured we complied with fundamental rights granted to every Indian citizen—the right to privacy and the freedom of speech.

However, in 2018, the ministry of electronics and information technology (MeitY) released the draft IT rules that impose greater regulations on intermediaries. These guidelines open a Pandora's box of potential issues, including infringement upon basic fundamental rights such as the right to privacy and the freedom of speech, and have the potential to stifle innovation and healthy competition. This puts us in danger of veering from safe harbour to perilously rocky shores.

The guidelines propose a mandate for intermediaries to moderate their content and hold them liable for information transmitted or shared on their platforms. Frankly, this is an exercise in futility. By 2020, an estimated 1.7Mb of data will be generated every second for every person on earth (Domo research). It is impossible for intermediaries to analyse and control their data in real time. It is, therefore, unfair for them to be held liable for the same.

If a man uses a map app to guide him to a particular location to commit a murder, he must be brought to justice. However, the app he used cannot be held liable. If the app company is petitioned by court order for data relevant to the case, they will be required to comply with the judicial system. This ensures that justice is served while protecting constitutional rights.

Intermediaries are also mandated to remove content within 24 hours of receiving a notice by court order or a government body. Firstly, it is particularly worrisome that any government agency has the authority to independently request intermediaries to remove material they deem objectionable. This is prime breeding ground for misuse of power without the right judiciary oversight.

This issue has been vigorously debated and settled in our Supreme Court. The *Shreya Singhal vs Union of India* case of 2015 saw two women arrested, without a court order, for social media content that angered a few political bigwigs. The arrest was made under the now-repealed Section 66A of the IT Act of 2000, which allowed any person that posted alleged 'offensive' content on websites to be arrested without prior legal due process. The Supreme Court rightly deemed this unconstitutional and an infringement upon the rights of Indian citizens. The social media platform was also not held liable for not taking down the alleged 'offensive' content immediately.

Requiring intermediaries to proactively moderate content will also create the issue of intermediaries themselves impinging on the right to freedom of expression. They may be forced to conduct arbitrary and unlawful censorship of opinions they feel are controversial, just to err on the safe side of the rules. Moreover, 24 hours is too little a time for intermediaries to evaluate and respond to requests. Such a short deadline gives no opportunity to seek clarifications or additional information on takedowns. This can have a very chilling effect on free speech and expression. After all, the cornerstone of a democracy is the ability to voice an opinion in public and freely debate it with those who differ—without the fear of being shut down, face unlawful arrest or government intervention.

Intermediaries are also told to use automated tools to track and trace the origins of such a content, and made to share this information. This will adversely affect encrypted messaging services and, thereby, the right to privacy. The landmark *Puttaswamy* case of 2017 addressed this issue. A 91-year-old retired High Court judge opposed the proposal for a mandatory biometrics-based ID card to be issued prior to allowing individuals access to government services. The Supreme Court deemed this unconstitutional and firmly stated that the right to privacy was a fundamental right.

The draft amendment also decrees that intermediaries need to remove content that could threaten public safety, health or critical information infrastructure. Suppose a few people object to a viral marketing campaign for cupcakes on the basis that it is 'glorification of diabetes'. They are free to generate opposing content and promote it on social media. If they strongly feel the campaign is detrimental to public health, they can take the matter to court. If they win, the court can petition the social media platform to remove the harmful messaging. This is the right way to uphold the checks and balances in place for our democracy to thrive.

Another onerous requirement in the draft amendment is that any intermediary with a user base of 50 lakh or above would need to comply with incorporating an entity, maintain a permanent office, and appoint a point of contact to liaise with law enforcement in India. In this world of digital agility, this is taking huge steps backwards in promoting India as an attractive market for investors and a healthy market for competitive business. In a nation of crores, it is not that difficult for a company to amass 50 lakh users, so this rule affects several of our homegrown enterprises and global partners. Furthermore, this will serve as deterrent to companies entering India or even offering their services here. Who will be the ultimate losers? We, the Indian citizens and businesses.

On the flip side, how can our government keep us safe from nefarious activities? Criminals do avail themselves of common intermediary platforms to incite violence against targeted groups, spread false information, and plan attacks. These cases need to go through the proper legal channels to gain access to private records, or to petition intermediaries to moderate offensive material. Additionally, there are already existing laws to fight cybercrime and other issues online in an effective manner. These include Section 505 of the IPC, and Sections 290 and 153A of the IPC (CIS). Legal reforms to streamline the judicial process of reviewing petitions for content takedown are also recommended to permit timely action.

We can take a page out of esteemed global entities. The United Nations' Rapporteur's Report on the Promotion and Protection of the Right to Freedom of Opinion and Expression states that only independent and impartial judicial authorities should be arbitrators of lawful expression—not governmental agencies. The Manila Principles are a global set of guidelines that offer best practices for nations when it comes to regulating intermediaries that include not restricting content unless by a clear, unambiguous order from a competent judicial body.

As India continues to ascend greater heights to establish its place among world leaders, we need to be extremely savvy with how we regulate this generation's most valuable asset—free-flowing data and information. If we want to continue to promote homegrown businesses and global investments, we must create the environment to receive them—and the intermediaries that facilitate data flow. Shouldn't we be relying more on a reformed and effective justice system to act as independent arbitrators of legal issues to protect the fundamental rights of all the citizens?

(*Research inputs by Chandana Bala.*)

ROOFTOP SOLAR

Hardly going through the roof

DHRUBA PURKAYASTHA
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Capacity creation for rooftop solar is lagging behind targets

INDIA'S POLICY AND implementation efforts for renewable energy have been globally acknowledged. India is to have 100GW installed capacity in solar by 2022, of which 60GW is expected to be attained from utility scale, and 40GW from rooftop solar (RTS). As of June 2019, installed capacity for solar is 30GW—and RTS accounts for 4GW, owing to recent growth in installations.

This limited growth in RTS has thrown up concerns with discoms losing revenues from higher tariff slabs for commercial and industrial consumers. Now, many RTS developers and EPC players have shut shop as amidst these concerns their business models don't seem viable.

RTS has the potential to contribute significantly to mitigation and has strong linkages to the local economy, but state governments and distribution utilities are not supportive of RTS. This is surprising, given the inherent benefits of RTS, and various policy and regulatory initiatives (including subsidies) that had been undertaken by the ministry of new and renewable energy (MNRE). These projects lead to savings in ATC losses, reduction in GHG emissions, lower water and land requirement as compared to utility scale solar. RTS has found a place in the Drawdown's list of top-ten GHG-mitigation technologies. Also, RTS is beneficial for distribution utility in terms of net margins, even when there is loss of revenue from reduction in sale of units. Both globally and in India, RTS programmes have been driven by incentives in the form of direct capital subsidy, tax credits, net metering and Renewable Power Obligations. But now some state governments and regulators are constraining deployment of RTS by imposing a variety of restrictions, such as capping—it translates into a reduction to a certain percentage at the local level (distribution transformer) load, and as a percentage of connected load per customer. While almost all states have allowed net metering, here also distribution utilities are creating problems. Discoms have been expressing concern around loss of revenues from high-tariff paying consumers, like when Open Access was allowed for third-party power purchase for large industrial consumers.

RTS deployment has been supported by technical assistance and concessionary lending from the World Bank and ADB through PSBs. These have not been adequately used. RTS deployment follows either capex or opex (Renewable Energy Service Company) models. In capex, the system is owned by the electricity user/RTS owner, whereas in opex the third-party solar power developer enters into long-term PPA. Currently, more than 70% of RTS (as per BTI report) is in commercial and industrial segments and limited to corporate-owned buildings. Interestingly, government tenders for state-owned buildings have seen limited success for lack of financing. The reasons for lack of bank financing for RTS include lack of credit information on off-takers, irrational reliance on credit ratings and financial institutions often prescribed by the government and regulators, and lack of credit to MSMEs. While the MSME sector can deploy RTS to the tune of 18-20MW, the deployment has been minuscule. However, with policy regulatory and institutional constraints increasing in RTS, simply enabling finance would not go a long way in increasing RTS deployment.

MNRE has now announced a scheme called the SHRISTI (Sustainable Rooftop Implementation for Solar Transfiguration of India), which aims to bring discoms at the forefront for deployment of RTS and achieve the 40GW policy target. SHRISTI incentivises discoms in relation to installed capacity of RTS in their area ranging from 5-15% of capital cost, and Rs 11,000 crore has been allocated. But the scheme doesn't outline implementation methods. Studies from Shakti Foundation and CEEW have shown that it is possible for discoms to benefit from RTS. In the case of Delhi, these have aggressively promoted and adopted RTS. However, most state-owned discoms are yet to figure out the benefits of RTS, and are too focused on revenue/cross-subsidy losses.

Given the transformative potential of RTS supported by improving technologies and falling prices of solar electricity generation and battery storage, it is imperative that state governments and discoms engage positively with market players. This would support India's clean energy targets and also create a widely distributed entrepreneurial ecosystem, especially when solar energy can create the largest number of jobs per unit of investment in energy, as reported by the International Renewable Energy Agency (*bit.ly/2IbeB97*).

ERIK ERIKSON

The eight stages of human development

Change is the essence of life; it is a process of emerging, adapting, shifting and moving ahead

VIDYA HATTANGADI
The author is a management thinker and blogger

ILLUSTRATION: SHYAM KUMAR PRASAD

OUR EARLY LIFE experience is very important as regards how we grow as individuals. Our identity evolves at various stages of life. We perceive and present ourselves throughout our lives, as per our sense of identity; we keep searching and understanding 'who we are'. Understanding this process can lead people to question their 'negative' identity labelled by society. Half of life is spent in making big changes in the way we perceive ourselves. Our personalities keep changing as we resolve crises in life, thus each experience brings a change within us.

Erik Homburger Erikson (1902-94) was a German-American developmental psychologist known for his theory on psychological development of human beings. He is famous for coining the phrase 'identity crisis', which means a sense of uncertainty and confusion in a person's identity becomes self-doubting. Erikson developed a classical psychological model of eight stages of human development, which till date is unparalleled.

1. Trust vs Mistrust (0-18 months): This is the first stage of human development. The child builds trust in this stage. Infants develop based upon the quality their caregivers give them to meet their basic needs. If these needs are not consistently met, they develop suspicion, distrust, anxiety. The basic virtue in this stage is *hope*. According to Erikson, the trust versus mistrust stage is the most important period in a person's life because it shapes a child's views of the world perpetually.

2. Autonomy vs Shame (18 months to three years): It is the second stage of Erikson's stages of psychosocial development. It takes place between the age of 18 months to around the age to three years. Children in this stage are focused on developing a greater sense of self-control; a child tries to become self-reliant. The basic virtue in this stage is *will*; a child develops a sense of personal identity that continues to influence his/her ego identity and development for the rest of life.

3. Initiative vs Guilt (3-5 years): During the initiative versus guilt stage, children begin to assert their power and control over the world, expressing it in their play and other social interaction. The basic virtue in this stage is *purpose*. They start exploring a lot of things. During this stage, it is important for caregivers to encourage their exploration and to help children make appropriate choices. Caregivers who discourage or act unresponsive may cause children to feel ashamed of themselves and this may affect them in overly depending upon the help of others.

4. Industry vs Inferiority (5-12 years): The basic virtue in this stage is *competence*. Children learn to read and write, do homework, do sums, do things on their own. School and social interaction play a key role during this time. A child's social world expands considerably as he/she enters school and develops new friendships. Through social interactions, kids begin to develop a sense of pride in their accomplishments and abilities. Children who do well in school are more likely to develop a sense of competence and confidence, and those who struggle with school work may have a harder time developing feeling of confidence. They tend to feel inadequacy and develop inferiority complex.

5. Identity vs Role Confusion (12-18 years): During this stage of adolescence, children explore their independence and develop a sense of self. In this stage, success leads to an ability to stay true to oneself, while failure leads to confusion and a weak self-image. Children who don't have a strong sense of their own identity can easily get influenced by others. This stage is crucial because if children get wrongly influenced, they can get into drug addiction, gambling and other dire habits. The virtue in this stage is *fidelity*.

6. Intimacy vs Isolation (18-40 years): A major concern that arises in the minds of humans in this stage is of love and intimacy in relationships with other people. Isolation occurs when a person fails to find a partner and fulfil the urge of sexual intimacy. If they don't find a partner, they feel lonely and inferior. The basic virtue in this stage is *love*. In this stage, humans build romantic relationships. Erikson believed that close friendships are also important to people in this stage. They develop close, committed relationships with other people. These emotionally intimate relationships in the adulthood play a critical role in this stage. Besides romantic relationships, friendship plays a vital role; closeness, honesty, friendship and love are most required for a nourished life.

7. Generativity vs Stagnation (40-65 years): This stage occurs during middle adulthood. The term generativity was coined by Erikson—it refers to establishing an ethnicity/a culture/a base that will guide the next generation. Generativity also refers to 'making your mark' on the world through creating or nurturing things that will outlast an individual. A generative person instigates a change. The virtue in this stage is *care*.

8. Ego Integrity vs Despair (65 years onwards): Erikson identified that in this stage a person faces internal conflict, which involves reflecting upon one's life—feeling either satisfied or happy with one's life, or feeling a deep sense of regret. The basic virtue in this stage is *wisdom*.

Change is the essence of life; it is a process of emerging, adapting, shifting and moving ahead.