



ILLUSTRATION: SHYAM

REFORMS IN HIGHER EDUCATION

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The GST lesson for education

An IT-enabled registration process that also permits an automated system for offering various programmes of learning by the institutions (with a strong back end IT accreditation system) may pave way for unleashing the hitherto untapped resources that this sector possesses

THE INTRODUCTION OF Goods and Services Tax (GST), hailed as the mother of all tax reforms in India, underwent a process of prolonged discussion and consultation, spanning almost two decades, culminating in the enactment of the Constitutional 101st Amendment Act of 2016, thus paving the way for GST from July 1, 2017. It subsumed within itself five central Taxes, six state taxes, ratification by majority of the state legislative assemblies, thousands of tax administrators and officials working in the indirect tax administrative structures of the central government and the state governments. This 'one nation one tax' is intended to bring benefits to business, to governments and to consumers in manner and scale of unprecedented magnitude. These apart, the

transparency of transactions which the GST entails is expected to unleash a cleansing of the economy, increase direct tax collection, improve customer satisfaction, and according to some experts, may lead to an increase in the gross domestic product by 1-2 percentage points.

Are there learnings from GST for the higher education sector? Just as a plethora of indirect taxes of varying rates and structures on multiple points and destinations were levied concurrently by both the Centre and the states in the pre-GST days, the higher education sector is under control of both the Centre and the states through a myriad of regulatory bodies—both statutory and non-statutory. Central universities are governed by various statutes of the central government, state universities, including private universities

and affiliated colleges, are regulated by various statutes of the state government; in fact these institutions are governed by both the central and the state governments. A typical University/institution is regulated by the University Grants Commission of India (UGC) under the UGC Act, 1956. If it has to offer a course in MBBS, the Medical Council of India has to be approached and permission obtained. If it proposes to begin a course in Dentistry, it has to approach the Dental Council of India, established under the Dentist Act, 1948. If it intends to begin a course in Pharmacy, it has to seek permission from the Pharmacy Council of India, established under the Pharmacy Act, 1948. For a programme in Homeopathy, the Central Council of Homeopathy has to be approached. For a programme in Unani/Ayurveda, the Central Council of Indian Medicine has to be approached. Permission of the Council for Architecture, established under the Architects Act, 1972 is necessary for commencing a course in architecture. If a course in teacher education (B.Ed, M.Ed, etc.) is intended, permission has to be obtained from the National Council for the Educational Research established under the National Council for Teacher Education Act, 1993. For any course in technical education (B.Tech, MBA, etc.), the All India Council of Technical Education (AICTE) is the concerned regulatory body. For a programme in legal education (LLB, etc.), the Bar Council of India is to be approached. Again if an institution intends to commence a degree program in distance education, permission has to be obtained from UGC, which in 2012 replaced Distance Education Council (DEC) as the regulator for offering programs in distance education. It's difficult to believe that a Central University cannot establish a department or increase its faculty strength without the permission of the UGC. To add to these are the various regulations/statutes of the state governments.

It becomes amply clear that over time, the higher education sector has become increasingly regulated and segmented, and the very concept of autonomy of a University is under threat. Prime minister Narendra Modi at the Indian Science Congress in January, 2015 gave a call for giving more autonomy and academic free-

dom to universities. The creation of multiple regulatory bodies, each viewing education in silos, has led to the growth of standalone institutions, each offering a program of learning in a segmented manner, divorced from other knowledge disciplines. There is, at present, no institutional mechanism for coordination amongst the various regulatory bodies, as these are under administration control of numerous ministries/departments under the Government of India—the ministry of human resource development, the ministry of health and family welfare, the ministry of law and justice, etc, and similar line ministries/departments in the state governments. Each regulator lays down its own standards of infrastructure, instructional facilities, minimum qualifications for teachers, often without consulting other regulators, thus creating further fragmentation and division in the higher education sector, while also making mobility of academic staff sticky. From the perspective of a University/institution, which is the seat of knowledge and learning, dealing with multiple laws and regulations creates several inefficiencies—academics more compromised as the institution is more concerned with the norms and standards that each regulation entails than the actual quality of teaching in classrooms. It is oft remarked that a college teacher is more concerned about enhancing the Academic Performance Indicators (API) score laid down by the UGC, which guarantees him/her career progression, than the outcome of classroom teaching and its impact on the learners. Denial of permission from regulators or withdrawal of recognition by a regulator leads to litigation cases, the number of which is mounting by the day in the Courts.

It is, therefore, time that we move the GST, with a higher education Council to be established at the apex level, with representatives drawn from the central government, all state governments, and the various regulatory bodies to draw a comprehensive roadmap—with an objective of de-regulating the higher education sector, unburdening it from multiple norms and standards laid down by multiple regulators, preparing a quality framework which encourages a quality framework which encourages academy, innovation and academic excellence at the institution level, with a strong accreditation system, releasing energy for increasing competition, and making financing of education more liberal. If Indian higher education sector has to make a mark internationally, and give to its students and learners quality education which is at par with developed countries, it has to make a significant departure from the past in the way we govern and view the entire gamut of managing education. Autonomy—academic, administrative and financial,

has to be encouraged and a new era created where the 45 Central universities, 318 state universities, 185 private universities, 129 deemed-to-be-universities, 51 Institutes of National Importance and around 37,200 colleges, and many more to follow give to its learners quality education, increasing employability and skill development, unwound and unburdened from the shackles of a stifling regulatory environment. There is a need to develop a national level information technology network, which links all institutions of higher learning, their asset base, infrastructure facilities, teachers and student profile, research work, curriculum development, and all the soft skills so that knowledge is integrated, shared and improved upon. An IT-enabled registration process which also permits an automated system for offering various programs of learning by the institutions (with a strong back end information technology accreditation system) may pave way for unleashing the hitherto untapped resources which this sector possesses.

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The government should encourage insurance systems where people, based on their socio economic calibre, buy insurance from the market

Insuring India

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Streamline subsidies to heal healthcare services in India

IN AN EMERGING ECONOMY LIKE India, every citizen must have access to equal and adequate healthcare services. Recently, government think tank Niti Aayog and the union health ministry signed a public private partnership (PPP) model contract for the management of non-communicable diseases in Tier 2 and 3 cities across the country. With the World Bank serving as a technical partner for this initiative, it is a welcome step toward boosting healthcare delivery.

Under the model contract, private hospitals will provide secondary and tertiary medical treatment for cancer, heart diseases and respiratory tract ailments at prices that are not higher than those prescribed under the government health insurance schemes. For non-communicable diseases needing these three kinds of specialised treatments, hospitals will need to have outpatient departments, in-patient beds, beds for intensive care, operation theatres, a centre for angioplasty and angiography, laboratories, and radiology services.

While the model contract promises to hone healthcare delivery in the country, India's patchy track record of public private partnerships (PPP) in healthcare, raises several concerns. The problem with PPP in healthcare is that the financial resources earmarked for the poor are often misused, leaving behind those in need.

Gaps in PPP

Over the last two decades, several state governments have tried to rope in private healthcare players to offer affordable treatment to the masses. But the government's efforts of offering subsidised healthcare to the underprivileged has resulted in the exploitation of private healthcare facilities through various means. While this was truly meant for abusing people who are below the poverty line, it has been abused. It has resulted in two things: one, people who are BPL are not really benefiting from this; two, by creating subsidies for them rather than improving their economic condition and bringing them up the economic ladder, we are spreading poverty and making it a perpetual dependence on the subsidies. This is what I call 'giving opium to the people'. While this is happening to BPL, people in the higher economic group are abusing the system. They are using the system to derive benefits; and they are not willing to pay premiums for insurance or pay for the services through their own means. This is causing an extra burden to the treasury as well as on private enterprises whose their margins are being squeezed. Private enterprises are now at the crossroads, unable to invest in future tech or improve quality of healthcare delivery to the masses.

In the long run, this will create a severe strain on the private sector to such an extent that will take away the global competitiveness in healthcare. This is an unfortunate turn of events. Even though the intention is good, it has unintended consequences and will have repercussions on healthcare.

What is the way forward? The government should encourage insurance systems where people, based on their socio economic calibre, buy insurance from the market by choosing the type of insurance they want. Insurance companies can provide the categorisation of the policies. The government can pay for people in the BPL category, who can access same type of healthcare. For the elderly, while there are government entities that provide insurance for that the aged, insurance could be done through their children's workplace or self-insured through their pension fund. If they do not get a pension, the government can subsidise them and compulsorily ensure they are insured irrespective of pre-existing conditions. In keeping with the interest of the economically weaker sections, the government should levy a sin tax by taxing cigarettes to discourage their production. The government could set aside a part of that money as endowment to subsidise BPL people afflicted by the harmful effects of smoking.

The need of the hour, thus, is for the system to become autonomous where healthcare providers, insurers and the insured are all aligned, and the government takes a step back and monitors to prevent unethical practices and the abuse of the system.

TECHcafé

The human power

Alternative sources of energy that power devices may also include humans

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IF YOU EVER TALK to people dealing with the mystical world, they will tell you about aura and the power of the human energy field. You would know about negative and positive energies, and how one can balance the energy around them to create a better world. While the mystical world has been all about harnessing that energy and creating a better life, increasingly scientists are also working on how humans can harness this power. With the demand for devices growing and no way to keep up with the battery problems, there have been attempts to use humans as an alternative source to keep devices powered.

Science can still not turn you into one of the comic superheroes, where you can charge your house or power an AC. But given the rate of progress, human energy can certainly translate into more power for wearables.

Body heat

If you can get the mercury to shoot up and ice to melt, powering devices should not be a problem. For years, institutes have been working on creating power from slight body temperature variations. That does not mean you have to get a fever to charge your Fitbit. Research conducted by Daryoosh Vashae of the North Carolina State University and his team shows a temperature difference of less than one degree can be harnessed to create energy to power devices. Published in the journal Applied Energy, the research points that although it is easy to store this energy, and it can come in the form of a wearable, the problem is it can only generate microwatts

of power, which cannot even power up a fitness tracker. More important, much like any other energy source, it loses power when idle.

Although a bigger generator can create more power, who would want to wear a clunky device to keep their gadgets charged? Vashae does highlight this to be a big drawback; he says efficiency is the key. Output for such devices may increase given the technology, but scientists have to ensure there is no loss of power in the idle state.

The real application of such devices is not for wearables but for biomedical research. A team of scientists at the University of Utah have developed a much similar device, which they believe can be instrumental in powering a pacemaker or an insulin pump. If possible, pacemakers would be able to run for

decades without needing a replacement, reducing the risk of infection that goes with replacing a pacemaker.

Walking

If body heat sounds too bizarre, walking is something that you can wrap your heads around. An easy concept to understand is that motion generates energy and companies have been successful in implementing this. In 2013, a company called SolePower started a project on Kickstarter, where an ankle-like device could derive power from walking. The company claimed that it could power a dead iPhone with 2.5-5 miles of walk. Recently, the company announced a smart boot, which would send GPS location and also gener-



ate power to recharge cells. It claims that people can get an hour of talk time with each hour of walking. Clearly, the technology is not for the lazy.

But that does not mean scientists are not venturing into bizarre notions in this field.

Vanderbilt University in the US has created an ultrathin layer of wearable, which, they believe, can generate energy both from walking and waving. While it cannot do what SolePower is doing as the amount of energy is very little, the takeaway is that it

can be built into clothes and create smart clothing. The thin layer can create shirts fitted with LED that can change colour or one that can record movements and incorporate them into virtual technology.

Breathing

Breathing cannot power your wearables, but it can help extend the battery life of biomedical devices. Research on biofuel cells has been on for long—these can generate electricity from blood sugar—and researchers from the University of Wisconsin-Madison have been improving the efficiency of a device that can create enough energy to power biomedical devices for breathing. The device or belt made of piezoelectric material, polyvinylidene fluoride (PVDF), can tap airflow caused by human respiration to create vibrations, which, in turn, creates energy.

Similar amounts of energy can also be generated from friction, where a smart skin attached to your body creates enough friction to generate millivolts of power.

As batteries become more of a problem than a solution—blasts of Samsung Note 7 devices is the best example of this problem, where battery optimisation led to faulty batteries—there is a need to look at alternative sources. And until we cannot solve that problem, we cannot advance the field of wearables. Human energy, thus, seems promising. But the best we can do for now is walk and expect that, over time, even the lazy ones will get to recharge their batteries.