

Technological innovation and economic development are positively co-related. Technological advancement is associated with greater productivity and efficient use of resources that can lead to a significant reduction in poverty, attract investments and increase economic output by manifold.

The onset of the Fourth Industrial Revolution (IR4) is being driven by mobile internet, advancement in “computing power and big data”, nanotechnology, artificial intelligence and more. World Bank has considered South Asia to become a hub for innovation in the Fourth Industrial Revolution. The region has a higher number of young people connected to new technological developments and has a huge market of educated labour. The advancement in technology will provide a means to tackle the “large-scale systemic challenges in South Asia”.

Any argument for technological advancement in such a populous region comes with opposition related to negative effects that this advancement can cause to labour markets. There is also a lack of understanding of these technologies that also create fears for the adoption of new technology in South Asia. The average firms underinvest in creating knowledge and providing skills and training to their workforces. Although Research & Development (R&D) investment varies across countries, even the best performers like India invest approximately 1% of their GDP on R&D ecosystem. Both public and private investment in R&D is low compared to other developing regions such as Latin America and East Asia. Although the Information and Communication Technology (ICT) has a good adoption rate in countries like India, Pakistan and Sri Lanka, the rate is low for Bangladesh and Nepal. The firms don't largely engage in e-commerce and online businesses. Even the acquisition of knowledge capital is largely limited to large and foreign-owned firms. Innovation, if any, is more an attempt at imitation than a novelty.

The new world economies will be built on IR4 technologies, which means that the governments need to form favourable policies for adoption of these technologies. This has to be done to avoid becoming outdated economies that can't compete with the global market. Despite the positives, experts suggest a loss of 40% jobs in the next 15 years as a result of technological advancement. Closing down the country's economy is no option as the countries have achieved a more prosperous growth functioning as open economies. The solution thus lies in not stemming the pace of technological change but rather being prepared for it. If the countries prepare for the disruption, there could be more and better job creation than loss.



Image source: TLI

## Skill Gap

In order to be prepared for the change that IR4 technologies are going to bring about, the professional skill of the workers needs to be made up-to-date. According to UNICEF, “More than half of South Asian youth are not on track to have the education and skills necessary for employment in 2030”. The South Asian countries which earlier targeted increasing accessibility of education, did not give a lot of attention to the quality of education. Students are given suboptimal vocational training that does not provide them with the desired skills needed for the labour market. Out of all the countries in the region, India has the highest number of graduates every year and is eighth worldwide. Despite overall better conditions on this marker, only 4% of engineers have necessary cognitive and language skills required to start a technology start-up and 3% have other specific skills in artificial intelligence and data science, etc.

In this regard, primary schools will play an important role, as not only technical knowledge but also the cognitive and non-cognitive soft skills will become important which are generally better learnt at a young age. Thus, economies need to spend on higher quality of

overall education. An overall strengthening of R&D ecosystem will be of utmost importance in order to make a progress towards innovation powered economy. More funds need to be allocated to universities and research labs that are working on technological innovations. A major reason why China which started on the same base as India has done well in terms of technological innovation is its massive increase in R&D spending since 1991. China's spending on R&D ramped up by an annual growth rate of 19% since 1991. The R&D ecosystem of China has been internationalised by forging academic collaboration with countries that do well in this front such as Japan. Thus, as World Economic Forum points out about South Asia, "stronger links need to be formed between governments that regulate technology, academia that nurtures new technologies, and industry that builds technology".



Image source: Co-work

## Start-ups

The novel ideas that come from the R&D ecosystem need to be then put into the market.

The role of banks will become crucial in order to extend loans to entrepreneurs and industries whose vision would be to create good and services related to IR4 technologies. Start-ups can thus become powerful weapons against the predictive loss of jobs as a result of technology replacing a large number of jobs. South Asia has tremendous potential to become an innovation and start-up hub. It has an unrivalled large number of young people, the region is also groping through a phase of tremendous urbanisation and with an overall increase in spending power, there is greater interest in digital innovation.

In order to incentivise people towards coming up with their startups, entrepreneurial culture has to be developed. Our education system should be reoriented towards promoting creativity and encouraging startups, rather than a culture that only aims at job security and discourages taking risks. The government needs to make changes in laws that disincentive these startups to come up and liberalise them in order for these startups to receive investments. The tax regulations for these startups need to be eased at large. Recently, the Government of India has exempted startups from paying the angel tax—“that required startups to pay a certain tax if they received investment at a rate higher than their fair market valuation.” The government should envision to bring together both public and private sector to collectively support entrepreneurs who come up with novel technologies. This can be modelled on Horizon 2020, which was a large scale government innovation program by the European Union. Special Economic Zones can be created for micro, small and medium-sized enterprises (MSMEs) with rules that encourage them to invest in infrastructure and set up manufacturing facilities. As pointed out earlier, MSMEs have often been found not investing too much on innovation than the larger firms. With a strong innovation system and dynamic start-up culture, a robust source of job creation can be ensured in South Asia.

## Conclusion

While COVID19 is having some major impacts on all sectors of the economy, positive openings have surfaced for technology & innovation sector. There has been an increased usage of technology to provide healthcare while also ensuring social distancing. This is just a single example of the positive impacts of technologies that are going to change the nature of economies and our lifestyles. Tech and innovation that come up should be aimed at addressing the need of those at the bottom of the pyramid. Inclusive policy approach should be followed in this regard to increase the acceptability of these innovations amongst most vulnerable sections so that they can reap the benefits of these changes.

South Asia has tremendous potential to become the next innovation hub. The role of

governments across the region will be essential to remove the roadblocks and incentive the firms that bring about these technological innovations. A healthy competition needs to be fostered in order to attract foreign investment. When the government will facilitate and the citizen will innovate, South Asia would take a flight to become the next hub for innovation.

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