

EVALUATION INDICATORS

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5. Structure - Presentation Competence
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All the Best

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INNOVATION AS A TOOL FOR ACHIEVING INCLUSIVE GROWTH IN INDIA

As per a recent Thomas Picketty report, 1 percent of the Indian population owns 21% of the resources. It is not surprising then, that India ranks abysmally low on Inclusive development Indicators in the World Economic Forum's Inclusive Development Index.

In a parallel but related development, the world is now entering the innovation-driven 4th Industrial Revolution. In this context, let us examine how

innovation can help achieve India's goal of Inclusive growth.

INNOVATION AS A TOOL FOR INCLUSIVE GROWTH

Inclusive growth implies economic development for all people and all sections of the economy. In a nutshell, no one is left behind in the growth story.

In many ways, innovation can catalyse inclusive development, for marginalised people.

Take women, for instance. The International Labour Assoc Organisation estimates a 'maternity loss'

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of 1 percent (Canada) to 30 percent (Turkey) of income, when women rear children. Innovation enabled solutions like working from home using the internet or handheld devices or monitoring the child using security cameras can alleviate this burden. It could potentially reduce the 'feminisation of poverty' and wage gaps that are very common.

Moreover, innovation enables a reduction in human effort. We have moved from bullock carts to trucks. Today, automation does the heavy-lifting and humans can focus on mental output.

This is good news for the elderly or the different

Physically - abled, who might lack physical capabilities to work.

Braille computers, automatic wheelchairs and vehicles etc.

Can help these groups benefit from growth of the economy. Given that the population of the elderly is set to double by 2030 in India, this also catalyses overall economic growth.

In remote villages, people can access economic opportunities through video conferencing, Internet-enabled workspaces etc. Further, the rural agrarian economy can also benefit from innovation.

Sensor-led monitoring of crops, Satellite-driven

weather forecasts and faster transport to the markets can alleviate rural distress. In fact it was the Green Revolution that driven by innovation like high yielding seeds, machines etc., that enabled India to become self-sufficient in foodgrains.

'Doubling the farmer's income' by 2022 will require sustained innovation-led interventions, across the supply chain. Mechanisation can help reduce 'disguised unemployment' and the amount of labour needed. This allows other economic activities like bee-keeping etc. to flourish.

Moreover, innovation can help India realise the goal of a 'welfare state' in the true sense. Reaching citizens through targetted schemes and convenient e-governance processes can be enabled. Opportunities created by tele-medicine and tele-healthcare can be scaled to benefit all citizens, especially those in informal sectors or rural areas.

Thus, innovation is a potent tool in enabling inclusive growth, especially in developing nations like India. However, a few challenges must await resolution.

ROADBLOCKS IN ACHIEVING INNOVATION-LED GROWTH

Developing nations like India are often slow in adopting and scaling innovation-led processes.

Technology transfer occurring with major many strings attached and at painfully slow speeds, is often not a good option.

In addition, India despite having a large population, suffers an acute shortage of Human capital. This can be attributed to the skill gap, that is, an inability to utilise processes.

This can be attributed to low schooling

outcomes as highlighted by the Annual Status of Education Report. India spends only 3 percent of the Gross Domestic Product (GDP) on education. Moreover, research spending is hardly 0.67 percent of GDP as compared to 2 percent in China.

It is thus, not surprising that India lags behind in innovating and filing patents. The 'Brain Drain' caused by educated students migrating to other countries for better opportunities, exacerbates the crisis.

Moreover, access to technology is highly skewed. Digital penetration and literacy

in rural areas is very low. Only about 58 percent youth even in urban areas could operate a handheld smart phone.

Social barriers like gender stereotypes, caste roles and early entry into the workforce (child labour) diminishes the space for innovation. Recently, a Khap Panchayat dictat prevented women from accessing mobile phones!

In a highly populous country like India, manpower is abundant and so are risks of technology replacing it. As innovation is scaled, there are apprehen-

sions that jobless growth may occur, and many people will lose their jobs. A recent McKinsey Global Institute report identifies occupations that are at risk of being replaced by technology.

Moreover, India with its continental diversity and giant population faces challenges in scaling up technology at an all-India level.

The Economic Survey 2018-19 highlights the inefficient data management process in the government departments. This can ~~both~~ slowdown the data -

driven growth process. Moreover, concerns for Privacy have emerged, following the recent Right to Privacy judgement of the Supreme Court.

Finally, innovation may further intensify the environmental crisis. Asia, with its developing countries already houses the maximum electronic waste, as per the International Solid Waste Association.

pollution and energy expenditure are exacerbated using super-computers and climate change and fuel for machines.

In this context, overcoming the above challenges is a key imperative.

for policymakers .

A ROADMAP FOR THE FUTURE

Mainstreaming innovation in the Indian Education system, through enhanced research and Industry-led opportunities, internships can help India develop human capital. An increase in budgetary and private sector expenditure on in these fields can go a long way.

Tackling social barriers through behavioral change is another step in the right direction. Caste, gender and religious stereotypes can be reduced by scaling

up education and awareness campaigns.

A robust legal framework regarding labour as envisaged in the recent Wage code bill can allay concerns regarding jobless growth. Data privacy legislation on the lines of Justice B.N. Srikrishna committee must be fast-tracked.

Building self-reliance through indigenous innovation as seen in case of our space research can reduce dependency on developed nations.

adoption of co-operative led innovation can

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aid inclusive development. The White Revolution (AMUL) stands as a shining example of scaling dairy processing technology.

Finally, India's commitment to the Sustainable Development Goals must be maintained.

Renewable energy, sustainable agriculture and streamlined waste disposal can create a win-win situation. India can continue, thus, to being a low-carbon economy.

Thus, As India aims to achieve a 5 Trillion Dollar economy, by 2024,

all sections must be on board. Innovation is not just a tool but a catalyst in achieving this inclusive growth.

It will help us achieve a society where the ^{following} ancient Indian philosophical maxim comes true,
☞ :-

Saive Bhavantu Sukhina
Saive * Santu Niramaya

[May all be happy,
may all be without
disease] .

INDIGENISING THE DEFENSE SECTOR: STATUS, CHALLENGES, AND OPPORTUNITIES

The year was 1971. A bitter war for Bangladesh's liberation was being fought between India and Pakistan. Pakistan's allies - USA and China were ~~not~~ naturally hoping for a Pakistani victory. The USA, in this pursuit, withdrew Global Positioning system (GPS) support to the Indian army.

Though India emerged victorious, the strategic imperatives of indigenising the defense sector were well-understood - fast-forward to 2018, where India launched a seven-satellite indigenous

Indian Regional Navigation System Satellite constellation

CURRENT STATUS

India is one of the largest importers of defense equipment in the world. Traditionally dependent on Russia, we are now looking at USA and Israel to diversify our sources. Still Russia constitutes over 60 percent of our defense export imports, causing a large foreign exchange outflow.

Indigenisation has made slow but steady progress. The Integrated Missile Development Plan led by former President Dr. A.P.J. Abdul Kalam has been a

giant leap forward. Under this plan, the AGNI, PRITHVI, TRISHUL, AKASH, NAG and the nuclear-capable AGNI missiles were commissioned.

In terms of nuclear capabilities, India has imposed a self-declared moratorium on nuclear testing. This was following the Indo-US nuclear deal after India's Pokhran-II tests.

However, delivery systems of nuclear weapons have been improved. The Inter-continental Ballistic missile AGNI, along with enabled Sukhoi helicopters and the indigenous ARIHANT navy ship complete our NUCLEAR TRIAD.

The Indian Navy's P-75I project aims to indigenously develop scorpena submarines.

A trend that stands out, is the poor participation of the private sector in defense. There is 49 percent foreign direct investment (automatic) allowed in defense. However, private manufacturers are dependent only on the government procurement in defense, and there is a trust gap that prevails.

Most of our defense indigenous defense technology thus, comes from organisations like Defense Research and Development

Organisation (DRDO) and Hindu-
stan Aeronautics Limited (HAL)
Indian Space Research Org-
anisation (ISRO) also
launches satellites like RISAT
and HYSIS with defense
applications.

In collaboration
with Russia, the BrahMos
project has been a shining
example of technology trans-
fer aided capability develop-
ment. The sea, air and land
variants of BrahMos are
also jointly exported.

Given that India
faces a volatile and highly
hostile South India Asia, defense
indigenisation is imperative.
Both Pakistan and China

have a history of war and conflict with India. Despite nuclear deterrence, conventional war isn't ruled out, as seen in case of Kargil (1999) and the recent escalation over the Pulwama attack.

India has also had to make emergency procurement of defense equipment during war situations. Thus, indigenisation has required acquired urgency, in many ways, but many challenges await resolution.

CHALLENGES IN INDIGENISING THE DEFENSE SECTOR

Firstly, the Indian private sector lags behind in terms of capability. They are not competent with global

manufacturers like Rockheed
Martin (USA) or Rafale (France)
They are at a highly nascent
stage currently, and highly
dependent on technology
transfer -

However, the woes
associated with technology
transfer are many. Apart
from being slow and tedious
there are many terms and
conditions attached, that may
thwart our strategic goals.
Rarely does it create self-
sufficiency.

Indigenous techno-
logy development led by
the Public sector undertakings
(PSU) and government departments
have been painfully slow. The
recently launched Anti-Satellite

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anything on
this page if
you are
not a student

missile was commissioned
~~way back in~~ almost 30
years ago!

Moreover, there is a
political inertia attached to
the defense sector. Multiple
scandals like BOFORS have
made successive governments
wary of procurement and new
projects.

Further, there is a
massive amount of condemnation
that India faces when
we test a device. The
recent Anti-Satellite (ASAT)
weapon test and the Pokhran
aftermath is a casus case in
point. The world is becoming
increasingly critical of mili-
tarisation. This doesn't bode well

for nations like India, whose defense technology is at a nascent stage.

Moreover, there is the question of spending public money in defense sector instead of on the people. The ethical dilemma is grave.

Rising defense expenditure reduces the space for spending on soo education and health.

Further, our economy may not be able to sustain the high costs associated with indigenous development of defense technology, given impending signs of growth slow down.

Once these challenges are ironed out, India can

benefit from self-sufficiency in defense.

OPPORTUNITIES IN INDIGENISING DEFENSE

An indigenous defense sector may emerge as a major foreign exchange earner for India. Neighboring nations like Maldives and Sri Lanka already procure equipment like helicopters from us. They might provide a ready market.

Moving along ISRO's trajectory, a defense indigenisation plan is already underway.

The recently launched Defense Procurement Procedure (Make-III) provides key opportunities for the private sector.

in terms of preferential procure-
ment and FPI. This can catalyze
economic growth through
employment and skilling.
Further, the global
trading order (WTO) has
exceptions for defense, that
we can benefit from, in
protecting our industry.

India's recent
entry into the Missile Techno-
logy Control Regime and Wasse-
naar arrangement have raised
its stature as a responsible
defense partner.

Moreover, defense
is a key area for collaboration
between nations. Developing
capabilities together in a South-
South fashion may help
developing nations. Military
Exercises like Malabar are an

arena to showcase capabilities, not just for deterrence but also for commercial purposes.

India can employ the skilled graduates from premier institutes like IITs, IISc etc, and reverse the 'brain drain'. In fact, as a hub of defense manufacturing in South Asia, it can attract quality Human Capital.

Finally, given the recent appointment of a Chief of Defense staff and streamlining of the National Security Council, India can take forward a planned approach to this sector.

Overall, though India stands committed to Non-violence, and Peace, it

must be ready to defend itself when the need arises. An indigenous defense sector will not only preserve economic resources, but also create wealth. It can help fulfill strategic objectives in the region, and help India attain 'Superpower status'.

As a responsible nation, India's indigenous capabilities will be imperative in bringing peace and stability to the region. It can help India emerge as a 'net security provider' in the Indian Ocean region.